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STATE STERILIZATION PROGRAMS FOR THE PROPHYLACTIC CONTROL OF MENTAL DISEASE AND MENTAL DEFICIENCY

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It has long been recognized that there is a large hereditary element in the development of mental disease and mental deficiency. In consequence, foresighted physicians in charge of institutions for the care of those with mental defect have often continued segregation beyond the term required for their preparation for extra-mural life. While this means of prevention fully justifies itself in decreasing the number of births of additional wards of the community, it proves expensive; and as the state institutions become overcrowded with those dangerous to the community or unable to care for themselves, it tends to be abandoned.

Toward the end of the last century it was found that tubectomy of the spermatic or ovarian tubes would prevent parenthood without other detectible change in physiology or sex characteristics. State laws were later passed to make this form of preventive medicine available in state institutions. The first of these, put on the statute books in Indiana in 1907, was later declared unconstitutional because of its punitive features, but it was replaced in 1929. California's law, passed in 1909, has since been amplified and that state has applied it to the greatest number of cases. Other states have passed laws until in 1943, as will be seen below, 24 states were making use of these prophylactic methods.[1]

As in the case of all legal measures for the control of transmissible diseases, the laws on the statute books are of far less effect than public education and public opinion. Our national prohibition experiment amply showed that only the laws that the public really supports are effectively enforced. The average citizen has not thus far learned that tubectomy differs from castration, the form of sterilization of farm and domestic animals of which he has heard. He has believed the supposed loss of sexual power to be a penalty imposed upon the institutional inmate by this method and has therefore not actively supported this form of preventive and protective medicine. Realizing this misunderstanding on the part of the public, the Human Betterment Foundation of California began in 1928 an educational campaign which has done much to expand the program of preventive sterilization in that state and initiate it in others. Periodically, and later annually, that organization collected statistics on the use of the sterilization law in each state. Recently such collection and publication have been continued by Birthright, the national organization for education in this field.

These statistics as collected from the hospitals for the insane and the schools for the feeble minded make it possible to compare the use of this prophylactic measure in the various states. The most recent report, that of Birthright, covering the period up to January 1, 1944,[2] shows that California still leads with 16,332 sterilizations,[3] which comprise nearly 40 percent of the 41,928 reported for the United States.

To compare the effectiveness of the program in the various states more than mere numbers of operations is needed. The most accurate comparison should be based on the proportions of non-institutionalized cases of mental defect in each state who are fertile and whose reproduction has been prevented by sterilization. Unfortunately, no such census is available. There is an approach to it in South Dakota, for this state maintains a census of all the known feeble minded within

[1] An excellent summary of the law in each state is contained in "Mental Hygiene Laws in Brief" of the National Committee for Mental Hygiene. The provisions of the laws are also reviewed and compared in "Eugenic Sterilization in the United States," by James E. Hughes, Supplement No. 162 to the Public Health Reports obtainable from the United States Government Printing Office.

[2] Available without charge from Birthright, Inc., Box 441, Princeton, N. J.

[3] The published series includes 680 additional voluntary sterilizations in San Quentin prison.

its borders and prohibits their marriage unless they have been sterilized. An indication of the completeness of the program in that state is given by the report of the State Commission for the Control of the Feeble Minded for 1944. Of the 262 mentally deficient persons who were married, 54 were infertile or required continuous institutional care. Of the remainder, 184, or 88 percent, had been sterilized.

A census of the inmates of institutions in each state is readily available. This, however, cannot be used as an index of those without the walls, since the ratio of the two groups varies greatly from state to state. There are similar variations in the rates of discharge from the institutions, and these figures are further complicated by the fact that it is usually impossible to ascertain how many patients are discharged for the first time.

Comparisons of the sterilization programs on the basis of total populations are logical, though they, too, have their defects. The proportion of the population having mental defects and the degree of defectiveness which is recognized as a social problem undoubtedly vary from state to state. Furthermore, after a sterilization program has been continued for a number of years, some of the operations are no longer to be counted as protective because of menopause or death. This results in an error in comparisons of the degree of protection in states having sterilization programs of unequal duration.

In spite of these unsatisfactory elements, however, the ratio of the total number of sterilizations to the population appears to be the best basis available for the comparison of state programs. It is probable that the sum of the errors referred to is well under 20 percent.

The total reported operations under the sterilization laws per 100,000 population have therefore been calculated and are given in Table I. In recent years there have been extensive migrations between the states consisting of industrial workers and members of the armed forces, all of which migrants are included in the census bureau's annual estimates of population. Since these may be presumed to carry with them an unusually low proportion of individuals with mental defect it has seemed preferable to assume a more normal population growth. The population for each state for years subsequent to 1940 has, therefore, been calculated by logarithmic extrapolation from the 1930 and 1940 censuses. Earlier values are taken from estimates in the Statistical Abstract of the United States.

It will be seen that Delaware has used the law most extensively, with 238 operations per 100,000 persons, with California a close second, and Virginia, Kansas and Oregon following.

The progress of the program in some of the states is indicated by Fig. 1. In general the curves show that a sterilization program, once established, has been continued at a rate which varies only moderately from year to year.

To indicate the current activity of the selective sterilization program the ratio of the annual number of operations to the population has been calculated for 1943, the last year with data available. To smooth out the year-to-year variations, the same value has also been calculated for the five year period 1939 to 1943 inclusive, using the population of 1941 the median year. The results are given in Table I and indicated by the slopes in Fig. 1. It will be seen that the majority of the states have shown a decrease in the 1943 rate when compared with that of the five year period. This is, in most cases, due to the acute shortage of physicians. One institution, for example, reported a large number of sterilizations planned, for which no physician could be secured within or without its walls. Utah is the notable exception with a large increase in the operation-rate in 1943.

When the patient himself is considered, the absence of any untoward effect of tubectomy upon the sex life of the individual seems obvious when it is remembered that nothing is removed from the body. This presumption was confirmed by Popenoe(4). Of 108 former psychopathic patients who reported on their sexual life after salpingectomy, 78 stated that they had observed no change, 8 noted less satisfaction than before and 22 felt greater satisfaction. He found the frequency of coitus of 65 vasectomized males to be the same as that reported by others for men upon whom no operation had been performed(5).

While it is realized that sterilization cannot be a complete cure for the problem of mental defect, as some enthusiasts have painted it, its value is becoming more and more firmly established. The best evidence regarding the inheritance of mental deficiency indicates that it is recessive in type and probably dependent upon more than one gene. Children of the mentally deficient may appear normal, but the proportion showing mental defect is high. Thus the British Departmental Committee on Sterilization(3) in testing the offspring of mentally defective persons, reported on 1802 who were between the ages of 7 and 13. Of these 17 percent were defective and 23 percent retarded. In the group over 13 there were 1848 of whom 32 percent were defective and 13 percent retarded. Similar evidence was found by Southwick(6). Among children of mentally defective persons he found that 46 percent had been patients in an institution for the feeble minded, 37 per cent were definitely retarded in their school attainments and only 17 percent had attained a grade normal for their age. For the children whose intelligence quotient had been tested, the modal value was 65, somewhat above that of 55 found for the defective parents, but well below the normal. Supporting, though

TABLE I

STERILIZATIONS REPORTED BY STATE INSTITUTIONS AS CARRIED OUT UNDER THE EUGENIC STERILIZATION LAWS OF THE VARIOUS STATES

Compiled from Reports of the Human Betterment Foundation and of Birthright, Inc.

Total sterilizations to Jan. 1, 1944 Per 100,000 population		Sterilizations per year: 1939-1943 Per 100,000 population		1943 Per 100,000 population	
Delaware	238	Virginia	10.4	Utah	12.1 *
California	221	California	9.6	Virginia	7.3
Virginia	169	Kansas	8.4	North Dakota	6.8
Kansas	158	Delaware	7.3	Delaware	6.2
Oregon	145	North Dakota	7.1	Nebraska	6.1 *
North Dakota	112	Utah	7.0	California	6.1
South Dakota	103	Oregon	6.3	Kansas	5.0
New Hampshire	98	South Dakota	6.1	New Hampshire	4.8 *
Minnesota	75	New Hampshire	4.6	Oregon	4.5
Utah	67	North Carolina	4.3	North Carolina	3.9
Vermont	64	Nebraska	4.0	Georgia	3.0 *
Nebraska	47	Minnesota	3.8	Iowa	2.3
Michigan	45	Iowa	2.8	Connecticut	1.8 *
Wisconsin	44	Indiana	2.8	Minnesota	1.6
North Carolina	38	Vermont	2.7	Indiana	1.6
Washington	38	Montana	2.7	Wisconsin	1.5
Montana	38	Wisconsin	2.6	Michigan	1.4
Indiana	36	Michigan	2.0	Montana	0.9
Connecticut	28	Georgia	1.8	South Carolina	0.9 *
Maine	25	Maine	1.7	Vermont	0.8
Mississippi	24	Oklahoma	1.6	South Dakota	0.5
Oklahoma	24	Connecticut	1.0	Mississippi	0.2
Iowa	22	Mississippi	0.9	Maine	0.1
Georgia	9	South Carolina	0.7	West Virginia	0.1
Alabama	8	West Virginia	0.2		
South Carolina	4				
Arizona	4				
Idaho	3				
West Virginia	2				

* 1943 rate greater than 1939-1943.
Population extrapolated from 1930 and 1940 censuses.

indirect evidence of the inheritance of mental defect was found by Dayton(2). Among the siblings of mentally defective or retarded school children in 20,473 families in Massachusetts 7.5 percent showed mental deficiency and a further 12.5 percent were retarded. Had they been chosen on the basis of parental defect the proportion would undoubtedly have been greater.

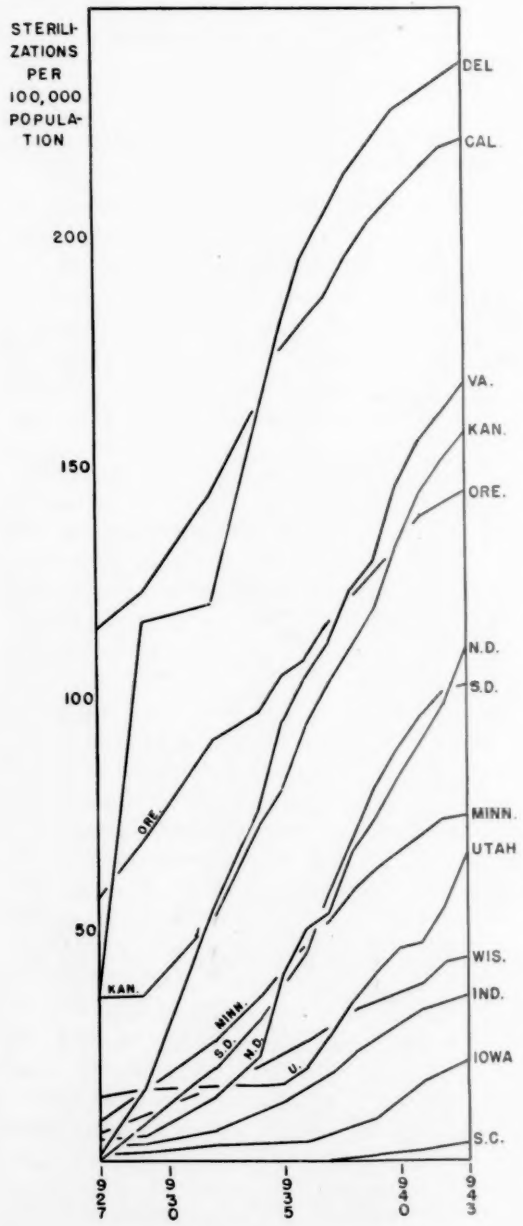

FIG. 1.

Studies of the families of the insane have shown an incidence of insanity among the offspring which is lower than that in the quoted studies of the mentally deficient. Insanity occurs in too low a proportion of the descendents to be caused by a single Mendelian gene(1). The probability of insanity among the children, however, is distinctly above that for the normal population.

While it cannot, therefore, be said that every child whose birth is prevented by protective sterilization of the defective would have inherited a mental defect, it is certain that they would have been born into unsatisfactory surroundings. Morally, economically and socially, mental defectives at best are poor parents. They lack inherently the ability properly to rear and educate their progeny. No court charged with the supervision of the adoption of children would allow a child to be adopted by persons known to be mentally defective. There is logic, therefore, in preventing their birth under such parental care. An indication of the amount of destruction of the normal family ties in the families of the defectives is given by Southwick's series(6). Of the 488 children of defectives only 15 percent were reared by their families, even when all care by relatives was included.

SUMMARY

1. Selective sterilization as a prophylactic measure for the prevention of mental defect has been employed in varying degree in various states.

2. Though the ratio of total sterilization to the estimated population is not a wholly satisfactory basis for comparison of the completeness of this program, it is the best available.

3. Delaware has made the most extensive use of selective sterilization with 238 tubectomies per 100,000 inhabitants, followed by California, Virginia, Kansas and Oregon.

4. In the years 1939 to 1943 inclusive, Virginia has been the most active, with 10.4 sterilizations per 100,000 per year, followed by California, Kansas, Delaware and North Dakota.

5. In 1943 the most active program was in Utah, with 12.1 tubectomies per 100,000 of population, with Virginia, North Da-

kota, Delaware, Nebraska and California following.

6. An important bar to a more extensive use of this form of prophylaxis is the public's lack of understanding of the differences between castration and sterilization.

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ELECTROENCEPHALOGRAPHIC STUDY OF CRIMINALS[1]

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The report by various workers of a correlation between electroencephalographic abnormality and behavior disorders(1-9), raised the possibility that abnormal cortical function might be related to criminality. In order to investigate this question, an initial study was undertaken in which electroencephalograms were obtained on 339 criminals. Comparison of these EEGs with similar records obtained from control subjects led to a preliminary report in which emphasis was placed on the greater incidence of abnormal EEGs in the criminals(10). However, subsequent study has led to the realization that in judging the normality or abnormality of adult EEGs adjustments must be made for age. Our standards for the normal population at the time of our first report were based almost entirely on young adults, whereas the prison population, as first obtained, was heavily weighted with middle-aged persons. Unpublished data indicates that in the range 21 to 25 years, electroencephalographic changes with age are so slight that for practical purposes they can be disregarded. EEGs were therefore collected on additional prisoners to bring the total number of cases in the 21 to 25 year range to 132. When the EEGs of the prisoners and the controls in this limited age group were compared, no significant differences were found.

Since completion of the present study a report on the same general subject has been published by Silverman(16). Points of agreement and disagreement will be considered in the discussion.

MATERIAL AND METHOD

Four hundred and fifty-two prisoners were studied at the Charlestown State Prison, the Norfolk State Prison Colony and the Massachusetts Reformatory.[2] The crimes for which these men were sentenced are shown in Table I. The control group consisted of candidates for military service, hospital employees and their friends. The total number of control subjects was 1,432. The age distribution of the prisoners and the control group is shown in Table III.

EEGs were obtained with a Grass three-channel instrument, using "monopolar" electrodes on the frontal, parietal and occipital regions and a "reference" electrode on the ears. The records so obtained were classified according to a method that has been previously described; it is based on the presence or absence of abnormal wave-forms,

TABLE I

TYPE OF CRIME

	No. cases
Robbery and larceny	148
Murder	79
Sex offenses	114
Assault and battery	33
Various repeated offenses	77
Total	451

[1] From Department of Neurology, Harvard University; Department of Psychiatry, University of Illinois College of Medicine.

[2] For permission to carry out this study we wish to thank Commissioner of Correction Arthur T. Lyman. The success of the undertaking was made possible through the cooperation of the staffs of the participating institutions. We wish particularly to thank Mr. Maurice N. Winslow, Superintendent of the Norfolk State Prison Colony, Mr. Martin Davis, Assistant Deputy, and Mr. Nelson Cochrane, Head Social Worker of that institution; Mr. Francis W. Lanagan, Warden of the Charlestown State Prison, Mr. A. Perry Holt, Jr., Psychiatric Social Worker at the prison, and Dr. William J. Dwyer, the Prison Physician, Major Michael J. Dee, Warden of the Massachusetts Reformatory, and Mr. Parker M. Colby, Head Social Worker at the Reformatory. We wish also to acknowledge our indebtedness to Mr. William H. Dahoney, Senior Correction Officer at the Massachusetts Reformatory for his active help.

on the frequency of the dominant rhythm and on the amplitude and the amount of time that a particular pattern is present. A key to the classification is shown in Fig. 1.

and controls in the 21 to 25 year age group are compared on the basis of a coarse electroencephalographic classification in which slightly slow and very slow EEGs are lumped

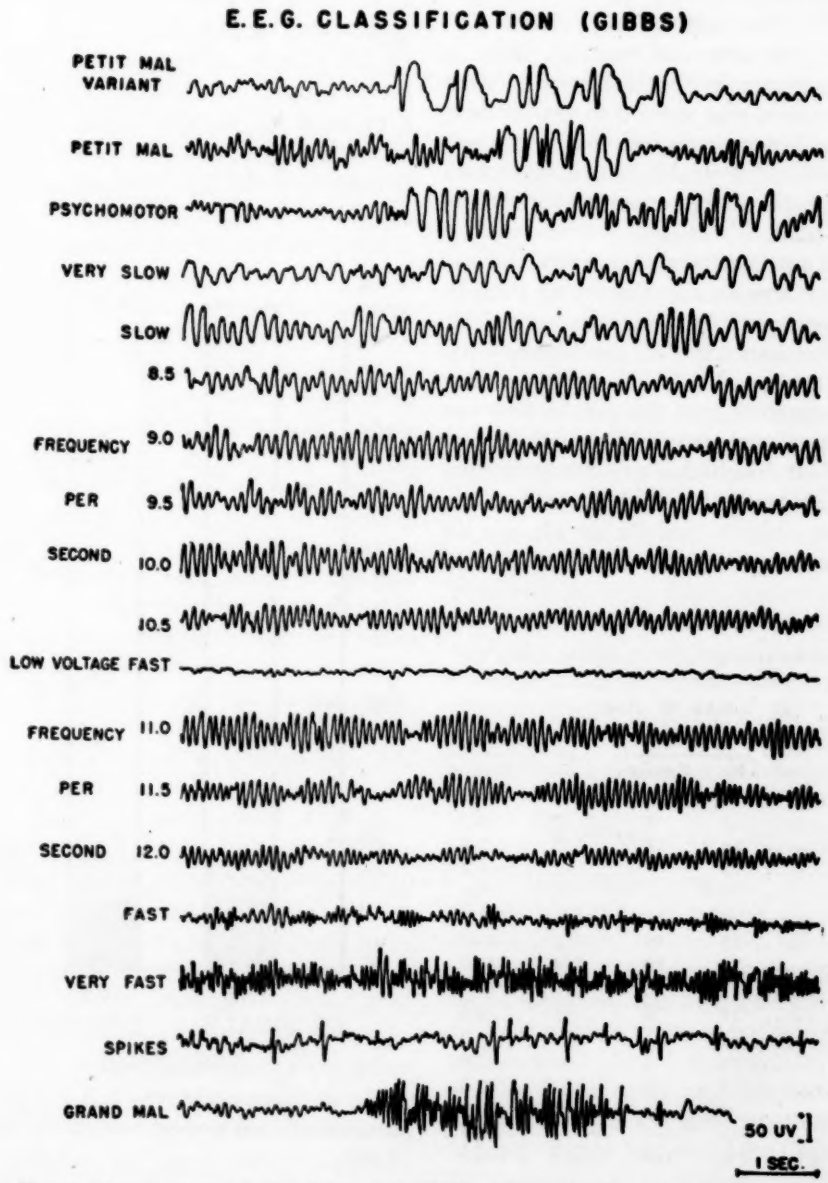

FIG. 1.—Types of pattern encountered in adult EEGs. The order in which they are arranged is slow at the top, fast at the bottom. The top three and bottom two patterns are classed as paroxysmal, *i.e.*, manifesting seizure-discharges. The names applied to each pattern are shown at the left. Time and voltage calibrations are given in the lower right corner.

RESULTS

The distribution, in terms of the electroencephalographic classification, of prisoners and controls in the 21 to 25 year age group is shown in Table II. In Fig. 2 the prisoners

together as slow; fast and very fast are lumped together as fast; paroxysmal EEGs are not shown and all others are classified as normal.

By combining the moderately fast and

slow categories under the heading *slightly abnormal* and the very slow and fast categories under the heading *very abnormal,* a coarse classification is obtained which is useful for summarizing the present results on all ages (Table III). As will be seen from this table, both prisoners and controls show a consistent decrease in the incidence of slow EEGs with increasing age up to the sixtieth year. A broad older age-group has been used because it seemed desirable to consider cases above 40 years of age even though their number is small.

In both the prisoners and controls, *normal* EEGs were commoner in the young than in the older groups. As has been stated, it was this circumstance, *i.e.,* the higher incidence of "abnormal" EEGs in the older age-groups together with the greater average age of the prisoners originally studied, that led to our first conclusion that the prisoners showed significantly more abnormality than the controls. Neither in Table II, nor in Fig. 2, where age is held constant, nor in Table III, where age is shown as a variable is there a significant difference between prisoners and the extramural population. Those guilty of certain types of crime tended to concentrate in certain age ranges; for example, in the present series thieves tended to be young, whereas sex offenders and murderers (because they were sentenced for life) were for the most part old. However, when age was controlled, no significant relationship could be found between the type of offense and the EEG.

TABLE II

ELECTROENCEPHALOGRAPHIC CLASSIFICATION OF CRIMINALS AND CONTROL SUBJECTS 21 TO 25 YEARS OF AGE

	Criminals		Controls	
	No.	Percent	No.	Percent
Parox.	0	0	8	0.8
S-2	1	1	7	0.7
S-1	14	11	98	9.0
8½	2	1	11	1.0
9	9	7	68	6.0
9½	20	15	146	14.0
10	25	19	215	20.0
10½	13	10	154	14.0
L.V.F.	21	16	110	10.0
11	11	8	95	9.0
11½	5	4	51	5.0
12	4	3	33	3.0
F-1	7	5	72	7.0
F-2	0	0	4	0.5
Total	132	100	1,072	100.0

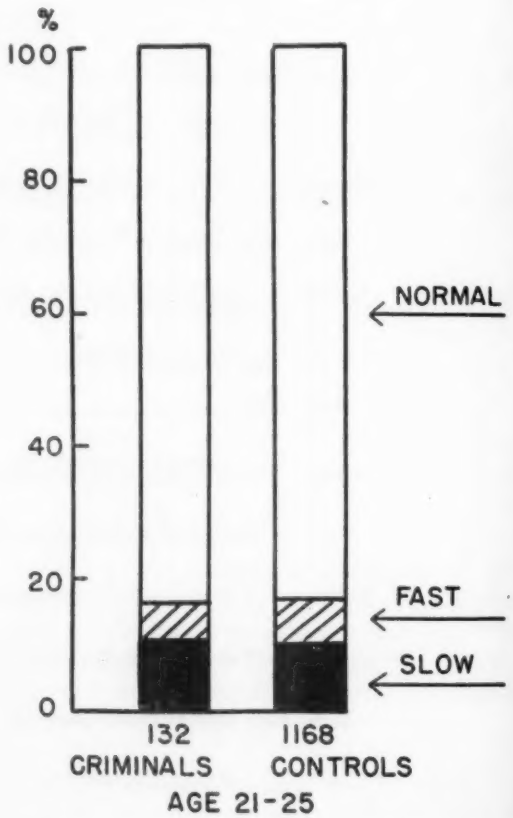

FIG. 2.—Incidence of slow, fast, and normal EEGs in criminals and control subjects 21 to 25 years of age.

TABLE III

AGE GROUPS

	21 to 30 years		31 to 40 years		41 to 60 years	
	Criminals	Controls	Criminals	Controls	Criminals	Controls
Number of cases	211	1250	123	100	118	82
Percent with normal EEG	79	82	78	81	72	82
Percent with slow EEG	12	9	6	5	6	4
Percent with fast EEG	9	8	15	13	21	13
Percent with paroxysmal EEG	0	1	1	1	1	1

Discussion

While the present study was in progress, several(11-18) reports appeared tending to correct the erroneous impression that electroencephalographic abnormality correlates highly with anti-social behavior of all types. Jenkins and Pacella(12) concluded from their study that there is not a high correlation between delinquency and electroencephalographic abnormality, but only between electroencephalographic abnormality and epilepsy or organic brain disease, both of which conditions may result in a tendency toward anti-social behavior. Hill(13) reported that a significantly increased incidence of electroencephalographic abnormality is not found in all psychopaths but only in that sub-group which manifests aggressive and more-or-less epileptic behavior. More recently, Michaels(18), using the data on problem children collected by Secunda and Finley(9), has concluded that no positive association exists between electroencephalographic abnormality and stealing or sex offenses. He states, however, that there is a slight positive association between electroencephalographic abnormality and fire-setting, and a fairly high association with enuresis.

From his analysis of 411 criminals, Silverman(16) concluded that "normal" prisoners do not show an amount of electroencephalographic abnormality significantly greater than normal control subjects. With this conclusion the present findings are entirely in accord. However, Silverman based his conclusion on a group of only 60 "normal" criminals (the rest were excluded as psychopaths) and on 62 normal control subjects. The present conclusions are based on a series of 452 criminals all of whom were "sane" in the legal sense of the term, and on a series of 1,432 control subjects. Since psychopaths were not specifically excluded, the prisoners considered here certainly include a large group of those who would be clinically diagnosed as psychopaths. If Silverman's report of a high incidence of abnormal EEGs among criminal psychopaths is accepted, a significantly higher incidence of electroencephalograhpic abnormality would be expected in the present group of criminals; yet this expectation is not fulfilled. The slightly higher incidence of abnormality in prisoners, appearing in Table III, is attributable to the fact that above 25 years of age the controls were carefully selected for "normality", *i.e.*, persons with a history of head injury, fainting spells, or any symptoms suggestive of brain disease were not accepted. The 21 to 25 year age group shown in Figure 2 on the other hand is a random sample of candidates for military service, and represents a more or less typical cross section of the population at that age level.

Epileptics occasionally commit crimes during psychomotor seizures, and organic brain disease may produce anti-social behavior. However, the fact that no significant elevation of electroencephalographic abnormality was found in the present series of "sane" criminals, suggests that neither epilepsy nor organic brain disease contribute significantly toward the production of the "sane" criminal. In a prison population that includes the "criminal insane" and more especially persons with epilepsy and organic brain disease, a group might be found in whom anti-social behavior and electroencephalographic abnormality seemed to correlate, but this correlation would be illusory; the true correlation is with the epileptic organic factors and not with criminality or psychopathy.

Summary and Conclusion

Electroencephalographic study of 452 criminals and 1,432 control subjects reveals that when age factors and sampling errors are controlled there are no significant differences between the two groups. Since the EEG is a fairly reliable indicator of epilepsy and organic brain disease, it seems reasonable to conclude that subclinical forms of these disorders are not contributing factors in a significant faction of the "sane" criminal population.

No significant correlation could be found between the EEG and the type of criminal behavior.

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THE CORRELATION OF PRE-ELECTROSHOCK ELECTRO-ENCEPHALOGRAM AND THERAPEUTIC RESULT IN SCHIZOPHRENIA [1]

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AND

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A review of the literature fails to disclose any study [2] on the possible prognostic value of the electroencephalogram in the shock treatment of schizophrenia. During the past two years we have been able to obtain at least one satisfactory EEG prior to electric shock on 187 schizophrenics, of whom 95 percent were young World War II veterans. Only 13 abnormal records were found in these patients, and of these 6 had previously been subjected to insulin therapy, one had a history of meningitis in infancy, and one had recently undergone a course of electro-shock elsewhere. For the most part the records were mildly abnormal, falling in Davis' (1) group 4. One patient with catatonic features had paroxysmal bilaterally symmetrical frontal 4-6 cycle flat-topped waves which were shown not to be due to muscle artifact. On the whole, then, the incidence and type of abnormality seen in our patients is consistent with the experiences of others (2, 3).

The shock therapy program at this Facility has been fairly well standardized, and for the most part consists of one course of 20 grand mal reactions. Occasionally a patient who has shown improvement and begins to recede with further shock does not complete the full course. Rarely do intercurrent illnesses prevent completion of treatment.

Of the 187 patients on whom we had pre-treatment EEGs, the length of time from the end of treatment to the rating of results averaged 3½ months, with a minimum of one month.

No patient has been observed long enough after treatment to warrant use of the term "recovered." We have substituted "quiescent" to connote the best results obtained, namely, apparently complete remission of psychosis existing for a year or less, during which time the patient has made an adjustment in his home environment. All patients in our "much improved" group have also been released from the hospital, either on convalescent status or by discharge, although they still showed some evidence of psychosis. "Improved" and "unimproved" carry the usual connotations (4).

The results of electric shock therapy in relation to the character of the pre-shock EEG is summarized in Table 1. It is to be seen that none of those who showed an abnormal EEG attained a status better than "improved." Of those who had a normal EEG, regardless of the type, one-fourth were able to leave the hospital as much improved or quiescent. The best results were obtained in those having the highest percent time alpha.

It is of interest that 50 percent of the abnormal EEGs were in patients with a history of prior insulin therapy. Among the 174 remaining patients only 13 (7.5%) had received insulin. Of these 13, ten are unimproved, three are on convalescent status, much improved.

Our post-shock records number over 150, and in general they reveal abnormal patterns during and immediately following termination of the shock therapy course, with an initial rapid return of the majority of records toward their previous condition.

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[2] Except the noteworthy finding by Proctor and Goodwin, of a tendency for 3+ delta activity to develop in subjects whose pre-shock EEG exhibited slow alpha or occasional 6-cycle activity. None with 3+ delta development improved. ("Comparative Electroencephalographic Observations Following Electroshock Therapy Using Raw 60 Cycle Alternating and Unidirectional Fluctuating Current," Am. J. Psychiat., 99: 525-530, Jan. 1943.)

Three patients *not* given electric shock deserve comment. One of these had excessive slowing during and persistence of 4-6 cycle activity following hyperventilation. Two days later he had a spontaneous grand mal seizure. We were then able to elicit a history of repeated nocturnal seizures in childhood. The two others showed paroxysmal diffuse 7 cycle dysrhythmia. They were approved for electric shock, but prior to the first treatment each developed spontaneous grand mal attacks. No history of previous seizures was obtainable on these two subjects. All three of these patients showed a classical picture of catatonia. These, of course, are not included in Table 1.

TABLE 1

Type of pre-shock EEG	No. of cases	Quiescent and much improved	Improved	Unimproved
Abnormal (4 and 5)	13 (7.0%)	.....	3 (23.1%)	10 (76.9%)
Low voltage fast	31 (16.6%)	8 (25.8%)	4 (12.9%)	19 (61.3%)
Less than 50% alpha and mixed fast	45 (24.0%)	12 (26.7%)	6 (13.3%)	27 (60.0%)
Over 50% alpha	98 (52.4%)	26 (26.5%)	20 (20.4%)	52 (53.1%)
Total	187 (100.0%)	46 (24.6%)	33 (17.6%)	108 (57.8%)

SUMMARY

A table is presented showing the relationship of EEG before treatment to outcome of electric shock therapy, in 187 schizophrenics, of whom 95 percent were young men. One-fourth of those with a normal pattern left the hospital much improved or "quiescent." None of these with abnormal records was able to leave the hospital. Of 19 patients who had previously had insulin therapy 3 left the hospital much improved.

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AN ELECTROENCEPHALOGRAPHIC STUDY OF CASES WITH SYNCOPE AND RELATED DISORDERS[1]

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The clinician is frequently consulted by patients complaining primarily of attacks of "fainting spells," or "dizzy spells." The occurrence of these attacks raises the question whether the patient is suffering from some form of epilepsy; hence, electroencephalographic study is often desired. The electroencephalographic changes occurring during various types of syncopal attacks have already been reported(1, 2, 3, 4, 5) but we have been unable to find an analysis of the electroencephalographic findings during the intervals between such attacks. Since the clinician rarely has the opportunity to obtain electroencephalographic data during attacks and for diagnostic purposes has to rely essentially on tracings taken between attacks, a study of these interval EEGs appears to be indicated.

In the present study we have attempted to answer the following questions: Do patients subject to "fainting spells" or "dizzy spells" have a significant incidence of electroencephalographic abnormality in intervals between spells? If so, what type of abnormalities are found? Is there any relationship between EEG. abnormality and type, frequency, duration and number of spells? Is there any overlap, from the EEG. point of view, between the group of cases having "fainting spells" and those suffering from epilepsy?

Recording and Classification of Electroencephalograms

Electroencephalograms were recorded with a Grass six-channel amplifying system. Electrodes were applied to both frontal, both parietal and both occipital areas. Both monopolar and bipolar recordings were taken; for the former, interconnected leads from the mastoid or ear served as an indifferent pole. Bipolar leads proved helpful in eliminating muscle artefacts in tense and restless patients. The tracings were obtained with the patient in a recumbent position with the eyes closed, in a darkened and quiet room.

The records were classified as normal and abnormal on the basis of experience with hundreds of normal and abnormal subjects. A normal record is defined as one in which the brain wave rhythm has a frequency between 8 and 12 per second and in which the pattern is unchanged or only slightly modified by two minutes of hyperventilation. An abnormal record is defined as one in which the prevailing activity is outside the frequency range of 8 to 12 per second, or one which shows a decided change in the character of the pattern as a result of two minutes of overbreathing. Certain subjective factors are of necessity involved in the classification of EEGs, but in essence our classification of normal and abnormal records agrees with that of other investigators in the field. The abnormal EEGs were also further analyzed according to the classification proposed by Gibbs, *et al.*(6) for epileptic patients.

Material

Over 2000 patients suffering from various types of attacks (usually involving unconsciousness) have been referred to the EEG. laboratory of the Boston Psychopathic Hospital for study during the last five years. From this material three groups of cases were selected (1) those whose chief complaint was "fainting spells"; (2) those whose chief complaint was "dizzy spells"; and (3) those whose chief problem was "fainting spells accompanied by rigidity."

The clinical histories of these three groups of cases were analyzed and all equivocal or doubtful cases were eliminated so as to refine

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the material and thus make the subsequent analyses more reliable.

From the group of cases with "fainting spells" we eliminated all cases with (1) a history of convulsive seizures at any time in the past life of the individual, (2) a history of sensory aura preceding the attack, (3) a history of definite motor phenomena such as rigidity, twitching or tongue biting during the attack, (4) the presence of positive neurological findings to suggest brain damage, (5) a history of medication within 24 hours of the recording of the EEG., (6) a history of unconsciousness lasting longer than 15 minutes and (7) a history of a significant period of confusion following the attack.

flaccidity in the group with "fainting spells." Only 11 cases were found answering the strict criteria for "fainting spells accompanied by rigidity."

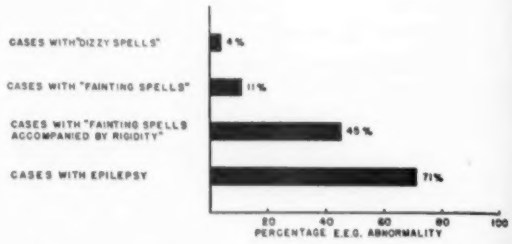

FIG. 1.—Percentage EEG. abnormality in groups of cases with dizzy spells, fainting spells, and epilepsy.

TABLE I

CASES WITH "DIZZY SPELLS," "FAINTING SPELLS," AND "FAINTING SPELLS ACCOMPANIED BY RIGIDITY," COMPARED AS TO TOTAL NUMBER, NUMBER OF ABNORMAL EEGS AND TYPE OF ABNORMAL EEG.

	No. of cases	No. of cases with abnormal EEG.	Electroencephalogram				
			S-1	F-1	F-1 and S-1	Petit mal	Marked O. B. response
Cases with "dizzy spells"	104	4	1	2	1	0	2
Cases with "fainting spells"	114	12	6	1	4	2	10
Cases with "fainting spells accompanied by rigidity"	11	5	2	1	2	0	3

S-1—mildly slow (5-8 per second).
F-1—mildly fast (12-18 per second).
F-1 and S-1—mixed mildly slow and fast.
Petit mal—3 per second spike and wave activity.
Marked O. B. response—marked response to forced overbreathing for 2-3 minutes ("big build-up"—Gibbs).

Purification of the original group of patients with "fainting spells" left us finally with 114 cases. It is of interest that in the majority of cases the attacks occurred under emotional stress and were often preceded by a period of "faintness." Wherever a clear description of the attack was obtained, flaccidity was a dominant element of the clinical picture.

The group of cases with "dizzy spells" was also purified by eliminating all cases with convulsions, sensory aura, motor phenomena, positive neurological signs, history of recent medication, history of unconsciousness, or history of true vertigo. This group after refinement consisted of 104 cases.

The group of cases with "fainting spells accompanied by rigidity" was refined in the same manner as those with "fainting spells" alone. The only difference was the presence in this group of rigidity as compared to

DATA AND RESULTS

I. Incidence of EEG. Abnormality.—Fig. 1 reveals our findings concerning the incidence of EEG. abnormality in the three groups of cases studied as compared with the incidence of EEG. abnormality in a heterogeneous group of 600 epileptic patients. Only 4 percent of the cases with typical "dizzy spells" and 11 percent of cases complaining of "fainting spells" had abnormal EEGs. However, of the cases with "fainting spells accompanied by rigidity" there was a much higher incidence of EEG. abnormality (45 percent). These figures may be compared with an incidence of 10 percent abnormal EEGs in our series of 200 young controls between the ages of 20 and 40.

II. Type of EEG. Abnormality.—Table I shows our findings concerning the type of EEG. abnormality in the three groups of

cases with "dizzy spells," "fainting spells," and "fainting spells accompanied by rigidity," tabulated according to the classification of Gibbs *et al.*(6). It is apparent from this table that the abnormal EEGs found in our three groups were essentially of a mildly abnormal type. Of the 21 patients with abnormal EEGs there were 15 cases (71 percent) whose records showed a marked response to hyperventilation. It is noteworthy that there were only two cases with petit mal type of EEG. (3 per second spike and wave discharges) and that both of these cases met our criteria for patients complaining of "fainting spells." The ages of these two patients at the time of the recording of the EEG. were 12 years and 15 years respectively.

III. Relation between EEG. Abnormality and Frequency, Duration and Number of Spells.—A study of the relation between frequency of spells and EEG. abnormality revealed that there was no correlation between these two factors. There were many patients who had normal EEGs who, nevertheless, complained of frequent "fainting spells," occasionally occurring as often as 7 to 8 times in one day. In the group of cases with "dizzy spells" there were also several who had normal EEGs although at times they had as many as 20 attacks per day.

There was no clear correlation between length of history of spells and abnormality of the EEG. in our series. Several patients with more than a twenty-year history of "fainting spells" or "dizzy spells" had normal EEGs.

We also analyzed our data to determine whether the patients with abnormal EEGs were those who had had the highest total number of spells. For both the "fainting spell" and "dizzy spell" groups there was no correlation between EEG. abnormality and total number of spells.

Discussion

In our selected group of patients with "fainting spells," the incidence of EEG. abnormality (11 percent) is as low as one finds in a normal control group; and the series of cases with "dizzy spells" has an even lower incidence of EEG. abnormality (4 percent).

Our findings in regard to the influence of age upon EEG. abnormality in different neuropsychiatric groups(7) would lead us to expect, on the basis of age alone, a higher incidence of EEG. abnormality in the group with "fainting spells" where the "peak" of the age curve (Table II) occurs around 10-20 years, than in the group with "dizzy spells" whose age peak lies between 30 and 40 years.

From the low incidence of EEG. abnormality in the above two groups of cases, it becomes apparent that the overwhelming majority of patients comprising the two groups do not show any electroencephalographic evidence of inherent predisposition to epilepsy. Whatever the instability in patients subject to "fainting spells" and "dizzy spells" it is not reflected in the cortical electrical pattern. Williams(9) has stated that "many patients who habitually faint after inoculation, on postural change, or on the sight of blood show paroxysmal outbursts indistinguishable from those seen in an epileptic." In contrast our findings would indicate that in the above quotation the term "many" might be replaced by the word "few."

Within our total group of 229 cases there were only two patients whose EEGs showed typical "petit mal" discharges (3 per second spike and wave). This is an incidence of 0.9 percent, which is somewhat higher than the 0.2 percent incidence of 3 per second spike and wave records reported by Gibbs, *et al.*(3) for control subjects. It is probable that follow-up of these two cases

TABLE II

Age Distribution of Cases With "Fainting Spells" and "Dizzy Spells"

	Age group						
	0-9	10-19	20-29	30-39	40-49	50-59	60 +
Number of cases with "fainting spells"	2	29	26	25	15	10	3
Number of cases with "dizzy spells"	0	11	20	41	15	13	4

would reveal typical seizures of the petit mal variety. The low incidence of the "petit mal" type of records within our series indicates that in seizure disorders other than epilepsy 3 per second spike and wave discharges are exceptionally rare, and probably within the limit of error.

Concerning patients with "fainting spells accompanied by rigidity," although the series is small, it would seem that there is a pronounced difference in percentage EEG. abnormality between these cases and the larger series whose fainting spells were not accompanied by rigidity. The high incidence of EEG. abnormality in the former group (45 percent) suggests that many of these patients may belong to the epileptic category and that their attacks might be interpreted as being mild forms of tonic seizures which may readily be confused with typical "fainting spells" unless the observer is alert to the motor component of the attack.

In view of the relatively high incidence of EEG. abnormality in the group of patients with "fainting spells accompanied by rigidity" it is apparent that the EEG. may be of aid in differentiating these cases from patients with true syncope.

We were unable to find any correlation between the EEG. abnormality and the frequency, duration and number of spells. Apparently repeated syncopal attacks may occur without producing significant brain damage as reflected in the cerebral electrical pattern.

Summary

In a study of the EEGs (between attacks) of a selected group of 229 patients subject to "fainting spells" and "dizzy spells" the following observations were made:

1. In patients subject to typical "fainting spells," the incidence of EEG. abnormality (11 percent) was as low as one finds in normal controls.

Patients subject to "dizzy spells" had an even lower incidence of EEG. abnormality (4 percent).

Patients subject to "fainting spells accompanied by rigidity" had a considerably higher incidence of EEG. abnormality (45 percent), suggesting that of the three groups this was the only one in which a significant number of the group might belong to the epileptic category.

2. There was no correlation between EEG. abnormality and frequency, duration and number of spells. It appears that repeated syncopal attacks do not produce EEG. abnormality.

3. Within the total group of 229 cases there were only two patients whose EEGs showed typical 3 per second spike and wave discharges (petit mal waves).

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THE ELECTROENCEPHALOGRAM IN SOME MILITARY AND SELECTIVE SERVICE CONVULSIVE AND NON-CONVULSIVE PROBLEMS

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INTRODUCTION

One of the problems in connection with the neuropsychiatric evaluation of military candidates and personnel is the significance of episodic attacks of fainting or convulsions or a history thereof. The solution of this problem is often possible on a clinical basis, but when the episode is unobserved, vague, or when an unsatisfactory history is obtained from a poor informant, the problem is immeasurably intensified. For these reasons we have performed electroencephalography upon some of the cases of this type referred by interested physicians, by selective service boards, by an induction station, by an army station hospital and by community agencies. This is a report of the electroencephalographic findings.

The clinical material comprised 92 male subjects whose varied neuropsychiatric characteristics could be assembled in five groups.

Group I consisted of men with a *history of convulsions during military service* observed by other than medical personnel.

Group II consisted of men referred because of a *self-claimed history of rare convulsions months to years ago.*

Group III consisted of men with a *history of "fainting attack" in the military service.*

Group IV consisted of men referred because of *episodes of faintness.* Despite assurance that it would be a painless test, the subjects generally had at least one episode at the time of presenting themselves for electroencephalographic testing, either while in the waiting-room or more usually while electrodes were being applied. The common features of the observed episodes were retention of consciousness; limpness; bodily slumping; pallor; sweating and weakness; and absence of involuntary muscular or ocular movements, incontinence or tics.

Group V were men *claiming vague "nervousness" or vague fainting spells* without being able to give a satisfactory description of their subjective state or to supply corroborative objective evidence or witnesses to their claimed "spells." They were considered obvious malingerers.

The apparatus consisted of both a Grass and a Rahm standard electroencephalograph. Six head leads were used. Both monopolar and bipolar recording was carried out during rest and hyperventilation. Localization technic was also used with presence or absence of phase reversal noted.

The electroencephalographic criteria follow. The adult electroencephalogram was considered abnormal if it contained, at rest, waves of less than 6 per second, frequent 6 per second waves, distinctive spikes, or wave and spike forms; or if it contained wave and spike forms during rest or induced by hyperventilation.

Group I.—Of the 20 men in this group, 9 were in the 20-25 year old age span; 7 of these had abnormal EEGs (one had 3 per second waves, four had 4 per second waves, two had 5 per second waves); and 2 had normal EEGs (one had 7 per second waves and one had 8-12 per second waves).

Six men were in the 25-30 year old age span. The EEG was abnormal in 3 cases (one had 4 per second waves, two had 5 per second waves, 1 was doubtful—6 per second waves); normal in 2 cases (8-12 per second waves); in 1 case the EEG that was abnormal during the resting state, developed wave and spike forms on hyperventilation.

Four men were in the 30-35 year old age span. One presented a doubtful EEG (a spikey record); 3 were normal (8-12 per second waves).

One man in the 35-40 year old age span had a normal EEG (8-12 per second waves).

Of the 20 EEGs in this group, 10 were abnormal, 2 were doubtful and 8 were normal.

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Illustrative Cases

Case A.—H. S., a 23-year-old U. S. Army first lieutenant, was referred with the following concise report: ". . . . gives history of two seizures in the past two months, neither adequately observed and question of epilepsy to be ruled out. Neurologic examination negative except for suggestive left Babinski. Normal skull roentgenogram, L. P., routine laboratory and glucose tolerance tests." He seemed highly intelligent and gave a negative past history of similar attacks. He was not known to be receiving medication.

The EEG showed a good alpha background against which slow waves appeared; waves of 5-10 per second in right and left frontal leads; 4-10 per second waves in right motor and occiput; 6-10 per second waves in left motor and occiput; phase reversal frontal-to-motor-occiput all on right side and normal phase relations on the left side. Hyperventilation induced 5 per second waves in all leads. EEG interpretation: because of slow (4-5 per second) waves and phase reversal, abnormal.

This abnormal EEG definitely confirmed the otherwise questionable clinical symptoms and signs (inadequately observed seizures and questionable left Babinski) and furthermore pointed to a right cerebral focus substantiating the questionable left Babinski.

Case AA.—A 22-year-old private had a similar history with these differences: neurological examination was entirely negative, but the subject stated he had been having seizures since childhood. Again L. P., routine laboratory tests and skull roentgenograms were normal.

The EEG irregular slow (4 per second) pattern in all leads was interpreted as abnormal. This confirmed the otherwise questionable diagnosis of epilepsy.

Case AAA had an even more definite clinical diagnosis of epilepsy as two typical grand mal seizures with tongue biting occurred during military service. The report was that of normal neurological examination, spinal fluid findings, skull roentgenogram, and blood sugar tolerance test.

The EEG showed 8-10 per second waves and was interpreted as normal. This is an example of the fact that a negative EEG does occur in epilepsy and does not contradict a good clinical diagnosis.

Group II.—There were 41 men in this group. Eight were in the 17-20 year old age span. Three of these had abnormal EEGs (one had 4 per second waves, two had 5 per second waves) and 5 were normal (one had 6 per second waves, one had 7 per second waves, three had 8-12 per second waves).

Thirty men were in the 20-25 year old age span. Of these, 14 presented abnormal EEGs (two had 2 per second waves, three had 3 per second waves, five had 4 per second waves, four had 5 per second waves); 1 was doubtful (6 per second waves); 15 were normal (one had 6 per second waves, four had 7 per second waves, ten had 8-12 per second waves). One of the abnormal resting EEGs developed wave and spike forms on hyperventilation.

Three men were in the 25-30 year old age span. The EEG was abnormal in 1 of these (5 per second waves) and normal in 2 (8-12 per second waves).

Of the 41 cases in this group, 18 had abnormal EEGs, 1 was doubtful and 22 were normal.

Illustrative Case

Case B.—A. M. R., a 24-year-old selective service registrant was referred by his board because he claimed he had had one grand mal convulsion five years ago at the age of 19, and though he had not been known to have nor did he claim any seizures since then, he stated he did have daily "dizzy spells" which could not be confirmed objectively or by physical examination.

The EEG showed occasional resting five per second slow waves in the left leads and spectacularly wave and spike forms in the left leads during hyperventilation.

The abnormal EEG significantly substantiated this otherwise difficult to assess complaint.

Group III.—Of the 9 men in this group 5 were in the 25-30 year old age span. Of the 5 EEGs, 4 were abnormal (two had 4 per second waves, two had 5 per second waves); 1 was normal (8-12 per second waves).

Four men were in the 30-35 year old age span. The EEG of one of these was abnormal (5 per second waves), and normal in the other 3.

Of the 9 EEGs in this group, 5 were abnormal and 4 were normal.

Illustrative Case

Case C.—W. D., a 23-year-old private, while in service had a history of fainting attacks the nature of which was obscure. There were normal neurological examination, L. P., skull roentgenograms, routine laboratory and blood sugar tests. The father had had "fits."

The EEG showed 4 per second waves in all 6 leads and was interpreted abnormal. Here the EEG definitely aided in establishing a diagnosis.

Group IV.—Twelve men constituted this group. Six were in the 20-25 year old age span. Of the 6 EEGs, 1 was abnormal (fre-

quent 6 per second waves in all leads) and 5 were normal (8-12 per second waves).

Three men were in the 25-30 year old age span. All had normal EEGs.

Three men were in the 30-35 year old age span. One EEG was doubtful (spikey) and 2 were normal (8-12 per second waves).

Of the 12 EEGs in this group, 1 was abnormal, 1 was doubtful and 10 were normal.

Illustrative Case

Case D.—F. B., a 24-year-old male, was referred by the selective service board because he stated that he had "fainting attacks" under stress, as exemplified during electroencephalographic electrode application at which time he had a short episode of sudden pallor, sweating and faintness without loss of consciousness or involuntary movements. He was able to walk to a couch but refused to lie down. He then resumed his seat and the rest of the electrodes were applied without further incident.

The EEG showed 8-12 per second waves with little change during hyperventilation. Interpretation was that of a normal EEG. This finding was consistent with the history and clinical findings.

This observer was impressed by the remarkable frequency of this type of reaction in so many otherwise apparently normal men and the fact that they had such episodes so fortuitously at the time of testing.

Group V.—Ten men fell into this group. Five were in the 20-25 year old age span. Of these, 1 had a doubtful EEG (6 per second waves) and 4 EEGs were normal (8-12 per second waves).

Two men were in the 25-30 year old age span, both with normal EEGs (one had 7 per second waves and one had 8-12 per second waves).

Three men were in the 35-40 year old age span, all EEGs normal.

Of the 10 EEGs in this group, 1 was doubtful and 9 were normal.

Illustrative Case

Case E.—V. M., a 24-year-old male selective service registrant, had a negative neuropsychiatric history except for vague but persistent claim that "he was nervous." He was a grammar school graduate but readily expressed his general dislike for "schooling." Physical examination was within normal limits. He was sturdy-looking and well built. During neurological examination whenever he saw the reflex hammer or hand approach his patellae he voluntarily extended his tibiae and flinched, but when his attention was occupied by conversation neither of these actions occurred and his reflexes were normal. Questions as to presence of convulsions or fainting attacks were answered with firm denial and no history of these was even dimly suggested. He was not taking any medication.

The clinical impression I recorded was "an obvious malingerer with limited intellectual ability."

The EEG revealed 8-12 per second rhythm in 6 leads. Hyperventilation induced little change. There was no phase reversal.

He was returned to his selective service board with the report: "normal EEG." Through the usual selective service routine he was then examined by induction station neuropsychiatrists and inducted into the army. After two months of army service we were asked to forward our electroencephalographic findings preparatory to neuropsychiatric disposition as he had made a poor personal adjustment to army life but did not have any fainting or convulsive phenomena.

In this case our EEG was consistent with the non-convulsive character of the problem of personality adjustment.

Commentary

Since these men were considered as neuropsychiatric cases with the outstanding question of the authenticity of their fainting, convulsions or history of either, the high incidence of abnormal EEGs proved of corroborative value in diagnosis. The highest incidence of electroencephalographic abnormality occurred in cases with known convulsive episodes and the highest incidence of electroencephalographic normality occurred in cases with other than genuine convulsive episodes. Subjects with episodes of pallor and limpness under stress and those with an obviously malingered history of seizures showed a high proportion of normal EEGs. This does not mean that the latter are not to be considered neuropsychiatric cases merely because of a normal EEG. It should also be stressed that "abnormal EEGs" are found in a small but definite percentage of normal persons (in the neighborhood of 5 to 10% according to the criteria used). By now it should be an established and accepted fact that abnormal EEGs do not occur exclusively or necessarily in convulsive states. They have been found in many conditions and also in the relatives of persons with epilepsy (1, 2, 3, 4). Nevertheless, abnormal EEGs do occur in a significant number of persons with convulsive states, and the EEG is of value when used in conjunction with other clinical and laboratory studies.

The trend in this series of cases reveals that the factor of increasing age tends to lower the incidence of electroencephalographic abnormality even in conditions with the demonstrably higher incidence of aberrant EEGs, a factor which has been pointed out by Golla and his associates(5) as well as by one of our own previous studies(6). The fact that wave and spike forms were induced by hyperventilation in two EEGs which did not reveal these forms in the resting record attests the desirability of a 3-6 minute period of hyperventilation during electroencephalography(7).

In connection with the appreciable incidence of abnormal EEGs (43.9%) in the present group of subjects with a self-claimed history of rare convulsions months to years ago, it is of interest to recall that Osgood and I(8) found that of 38 epileptic patients in whom there had been cessation of seizures for five or more years, 25 (or 65%) still had abnormal EEGs despite absence of seizures and of lack of anti-convulsant medication. From that study we concluded "that the EEG may be helpful in the diagnosis of epilepsy in persons who several years before have had poorly defined 'spells,' the nature of which is obscure." This conclusion is substantiated by the present study.

Reported Related Studies

As one of the discussants of Harty and the Gibbs'(9) electroencephalographic study of candidates for military service, I pointed out that my then small series of cases had a surprising incidence of abnormal EEGs in convulsive states and of normal EEGs in obvious malingerers. Harty, Gibbs and Gibbs'(9) electroencephalographic study of 274 candidates for military service revealed the following incidence of pathological EEGs: 88% of 8 cases of psychopathic personality; 60% of 8 cases with family history of epilepsy; 50% of 4 cases with convulsions only in infancy; 60% of 63 cases with functional disorders, such as enuresis, temper tantrums and sleepwalking; 28% of 61 cases having history of head injury with unconsciousness; 11% of 10 cases having head injury without unconsciousness; and 11% of cases with history of headache, giving an incidence of 30% for the entire group of 274 men. The incidence of a positive history for neuropsychiatric disorder in relation to various EEGs was as follows: 86% of the 7 cases with wave and spike or square-topped 6 per second waves, 82% of the cases with pathological slow waves and 34% of the cases with dominant 10½ per second frequency. Pathological EEGs were present in 28% of the men accepted for military service, in 36% of those rejected and in 55% of those rejected for neuropsychiatric reasons. They concluded from these figures that there appeared to be a significant relation between variants in the EEG and a history of neuropsychiatric disorder and that the EEG could be combined with other tests to determine fitness for military service.

Schwab(10) reported that the EEG had been found useful in examining Navy personnel with histories of fainting attacks, head injuries, spells of dizziness, or with suspicion of epilepsy, but cited individual examples without making available the percentage incidence of the electroencephalographic findings. He and his associates found the EEG of greater clinical value in the Navy than in civilian hospital work in establishing or ruling out a diagnosis of epilepsy because more often Navy personnel minimized their clinical histories, whereas civilian patients, seeking medical treatment in the hospital clinic, readily related their symptoms.

Schwab's(11) subsequent report of this group revealed that 272 Navy personnel were examined. Criteria of electroencephalographic abnormality consisted of waves slower than 8 per second, spikes, increased voltage, fast activity or combinations of slow and fast waves seen as waves and spikes in petit mal seizures. He stated that persons who tend to faint or have convulsions usually show abnormal waves. In his study, the EEG was abnormal in 90% of those with a diagnosis of clinical epilepsy, whereas normal EEGs usually prevailed in those with isolated syncopes who were not considered clinically epileptic. In cases of mild head injury, the EEG was generally normal, but in cases of severe head injury, an abnormal record persisted much longer than the clinical signs. He believed that the importance of the EEG did not eliminate the need for clinical history and neurologic examination.

Silverman(12) presented the electroen-

cephalographic findings in 173 neuropsychiatric army general hospital patients. The criteria of abnormality were paroxysmal 2-3 per second delta waves; 4-5 per second rhythms, sometimes "flat-topped"; 6-7 per second waves; all wave and spike forms; single spikes, often with a slow wave component (4-6 per second); multiple spikes and fast waves. Of 50 cases of post-traumatic head syndrome, the EEG was abnormal in 25 (50%), borderline in 17 (34%) and normal in 8 (16%); of 38 cases of epilepsy (all types), the EEG was abnormal in 26 (68.5%), borderline in 8 (21%) and normal in 4 (10.5%); of 40 cases of psychoneurosis, the EEG was abnormal in 1 (2.5%), borderline in 6 (15%) and normal in 33 (82.5%); of 13 cases of constitutional psychopathic state, the EEG was abnormal in 8 (61.5%), borderline in 2 (15.4%) and normal in 3 (23.1%); of 9 cases with unconfirmed disease of the nervous system, the EEG was abnormal in none, borderline in 1 (11.2%) and normal in 8 (88.8%; of 6 cases of ill-defined disease of the nervous system, the EEG was abnormal in 3 (33.3%), borderline in 5 (55.5%) and normal in 1 (11.2%); of 4 cases of brain tumor, the EEG was abnormal in all 4 (100%); of 3 cases of chronic active encephalitis lethargica, the EEG was abnormal in 1 and borderline in 2; of 2 cases of recovered spontaneous subarachnoid hemorrhage, as of 2 cases of migraine, the EEG was abnormal in none, borderliine in 1 and normal in 1; of 2 cases of psychosis, the EEG was normal in both; of 1 case of multiple sclerosis, the EEG was abnormal.

Solomon, Harrison, Wittson, and Hunt (13) found that in the selection of naval recruits there were 313 cases of suspected epilepsy, of which the EEG was abnormal in 39% and borderline in 12%. In making the diagnosis the EEG was of primary importance in 12% and of secondary value in 55% of the cases. Of 40 cases of migraine with a history of fainting or dizziness the EEG was abnormal in 35% and borderline in 5%.

Summary

Electroencephalography was performed in 92 military and selective service convulsive and non-convulsive problems.

Of 20 subjects with a history of convulsion during military service observed by other than medical personnel, the EEG was abnormal in 10 (50%), doubtful in 2 (10%) and normal in 8 (40%).

Of 41 subjects with a self-claimed history of rare convulsions months to years ago, the EEG was abnormal in 18 (43.9%), doubtful in 1 (2.4%) and normal in 22 (53.4%).

Of 9 subjects with a history of "fainting attack" in the military service, the EEG was abnormal in 5 (55.6%) and normal in 4 (44.4%).

Of 12 subjects with episodes of faintness with retention of consciousness, the EEG was abnormal in 1 (8.3%), doubtful in 1 (8.3%) and normal in 10 (83.4%).

Of 10 subjects considered malingerers with vague "nervousness" or vague fainting spells, the EEG was abnormal in none, doubtful in 1 (10%) and normal in 9 (90%).

From this study it was concluded that the electroencephalogram was of assisting value in the neuropsychiatric diagnosis of nonconvulsive and convulsive problems.

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SOME REACTIONS SEEN AFTER ELECTRIC SHOCK TREATMENT [1]

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Electric shock treatment frequently produces clinical by-products of interest. Most frequently seen is the organic confusion which arises in the course of treatment and persists sometime afterwards. We should like to call attention to another interesting clinical reaction which we have encountered and has been referred to in other reports (1, 2).

Essentially this consists of an acute psychotic episode, starting a few days after treatment was discontinued, and lasting several days to several weeks. The psychotic picture in such patients was different from that which existed at the time shock treatment was instituted. In most instances with the clearing of the acute psychotic episode, the original symptoms disappeared or subsided. In some there was a recurrence of the original psychiatric picture.

The treatments were given daily and all patients received preconvulsive intravenous injection of sodium amytal (3).

CASE 1.—W. W., aged 28, was admitted in a depression of a few weeks' duration, apparently precipitated by the anticipation of his marriage within a few days. History revealed several manic-depressive episodes, the first of which occurred at the age of 22. During one of the depressive phases, he had been given metrazol and, to the best of our knowledge, had had no untoward effects. Clinical examination revealed a typical picture of depression, the patient expressing feelings of guilt over his inadequacy to accept responsibility, feelings of unworthiness, lack of initiative and suicidal ideas. Shock treatment was instituted and the patient was given daily treatments with intravenous amytal. After the first few, he responded quite well and after the fourth one was somewhat disoriented. He still expressed feelings of inadequacy and treatment was continued. In subsequent days, the patient complained of his confusion. After 12 treatments in which he had 10 grand mal responses, treatment was discontinued. He felt much better in the sense of his initial clinical symptoms. He was no longer depressed but was quite confused and had marked memory gaps. However, he did not present any problem in adjustment and aside from his confused state which seemed to subside somewhat in the following days, he managed to adjust on the ward quite well. Three days after treatment was discontinued, the patient awoke at night quite disturbed, belligerent, refused to go back to bed and said that several things had occurred in the past 48 hours which would have to be changed. During that day he continued to be quite agitated, resistive, demanding and negativistic. He spoke to the physician in a threatening manner and it was learned that he planned to escape from the hospital. He was transferred to a disturbed ward where he was very violent, resistive and suspicious. He refused to talk to anyone but the "higher ups." He was restless and agitated and claimed that strange things were going on for which he demanded an explanation. Occasionally he would burst out in meaningless laughter. Most of his productions were of a paranoid nature and were at times quite disconnected. He also became grandiose and said that some day the whole world would hear about him. This behavior continued for 8 or 9 days and gradually the patient quieted down. He spoke of being afraid of marriage but was definitely much better. This improvement continued so that about 10 days after his psychotic episode, he was friendly, cooperative and quiet, apologized for having threatened the physician, and was finally discharged as very much improved. We have heard from the patient recently, about 7 months after his discharge, and he is doing quite well.

This patient, who came in as a depression, developed a psychotic reaction 3 days after he had received 12 shock treatments. The picture, although at first dominated by the usual evidences of an organic reaction, seen immediately after electroshock treatment, was later dominated by a paranoid trend. The psychotic episode lasted about 9 days and the patient recovered, without evidence either of the original psychosis or the subsequent one.

CASE 2.—H. L., 29-year-old white female. History revealed emotional difficulties for years, characterized by moods of depression and disturbed behavior. A few months before admission, her condition had become much exaggerated. She was depressed, had suicidal ideas, but also had wild outbursts of temper. With it all she expressed fears of fainting, although this latter symptom had been present for many years. The patient gave birth to a child a few weeks before she came to the hospital. Symptoms of anxiety and depression seemed to dominate the picture on admission. One could not

[1] Read in part before the New York Neurological Society and the Section of Neurology and Psychiatry of the New York Academy of Medicine.

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be entirely certain of the diagnosis but the feeling was that we were dealing with a severely neurotic individual who had developed a depression. Daily shock treatment with intravenous amytal was instituted. After 4 shocks the patient began to feel much better. On subsequent days most of her anxieties seemed to be directed against the treatment. She expressed some fear and also showed signs of confusion, but as treatment continued, she improved and after the twelfth shock she still complained of her old fears, spoke at length about her confused state. In the course of the next few treatments, she improved considerably, made plans for going home and about the future. Treatment was discontinued after the nineteenth shock, all of which had been grand mals. Although the patient was oriented for time and place, she showed memory gaps for recent events. Her mood was cheerful and although she expressed some of her old fears and anxieties she felt she could overcome these. In the days immediately following treatment, she got along quite well. One week later she became restless, very confused and tried to get out of the doors, said that rats were in her clothes and she began to disrobe. Soon after that she became stuporous for 2 days, became much more disturbed, banged on the doors, threw furniture around and said she would kill someone if she did not get out. She spoke in a very confused and disconnected manner, claimed that she was pregnant, expressed marked feelings of unreality and ideas of reference. She gradually began to quiet down on the fifth day after the disturbed period set in and improved rapidly after that. She was active, cheerful, wanted to go home but had memory gaps for her delivery. On discharge she showed some slight impairment of memory and retention. She is still in the community 7 months after treatment, apparently very much improved.

CASE 3.—S. B., 22-year-old white male. The main symptoms were feelings of insecurity, inadequacy, with marked expressions of depersonalization and feelings of unreality. The symptoms had been in existence for a number of years. Recently, before admission, he had become quite depressed and expressed suicidal ideas. He was unable to work and stayed in bed all day. He had ideas of reference and felt there was no hope for him. In the hospital he was also quite depressed. There was a difference of viewpoint as to the diagnosis, some physicians considered that he was schizophrenic and others that he was a depression. Daily shock treatment with intravenous amytal was instituted. After 5 treatments the patient became hypomanic, euphoric and optimistic, making plans for the future. He showed some memory gaps and also complained of these. After the seventh treatment the patient began to speak of being dead, would awaken at night quite confused, asking where he was and if he were alive. With subsequent treatment this symptom subsided but his general confusion persisted. He improved clinically and after 15 treatments, although quite confused, did not express any feelings of depression, depersonalization and treatment was discontinued. In subsequent days this improvement was maintained and some of his confusion subsided. However, one week later he began to regress and although his depression had lifted he again expressed feelings of depersonalization and unreality accompanied by "deja vu" phenomena. Soon after that he again became quite depressed and treatment was reinstituted about 2 weeks after it had been discontinued. After 4 treatments he developed a severe upper respiratory infection with cervical adenitis and treatment could not be continued until about 3 weeks later. At first he was apprehensive but with the fifth treatment began to feel much better. He appeared to be quite troubled by his confusion and his mood fluctuated so that at times he was euphoric and other times quite tense and agitated. As treatment was continued he became more cheerful. Feelings of depersonalization and unreality disappeared and the main troubling feature appeared to be his confusion. Treatment was discontinued after 25 shocks. During the days following he felt quite well, looked forward to going home but spoke of his memory defects which seemed to annoy him. One week after treatment was discontinued he still seemed quite improved but in spite of his confused state, it was decided to try him home for a few days. He had an interview during which he spoke a great deal about his girl friend and also about the fact that he was uncertain as to the exact status of his relationship to her. It appeared almost as though he were reluctant to leave. That night he awoke quite suddenly and said, "Something has happened to me. I have never been this way before." He rushed from his room, shouting, became very destructive and had to be transferred to a disturbed ward, where he was restless and obscene. He spoke in a very disconnected fashion, was actively hallucinated, confused, but was occasionally accessible. His productions were quite obscene and dealt mainly with his girl friend. He was afraid to have relations with her. He feared injury to his genitals. He expressed a wish "to be the other sex." His excited disconnected speech gave way in the next few days to a state of mutism. About 12 days afterwards the patient began to recuperate, felt much better, spoke of going out and complained of his inability to remember. A few days later he was quiet enough to be transferred back to the quiet ward. His psychotic symptoms had subsided and feelings of unreality soon returned in full force.

It is interesting to note that a number of years ago this patient experienced an hallucinatory reaction during pneumonia. It is also of interest that the patient was exposed to a toxic infection only a short time after shock treatment was discontinued. He was given malaria treatment and although during his fever he at times became quite restless, he never developed a psychotic episode resembling the one he had just experienced following shock therapy. All in all, the patient received 3 series of shock treatment. During the first he received 15 shocks with 13 grand mals and the symptoms disappeared only to return after a few weeks. Later he received 3 grand mals and treatment was discontinued because of a series of colds and could not be resumed

until 3½ months after the initial series was discontinued. During this course he received 25 grand mals and developed a psychotic episode one week after treatment was discontinued. This lasted 12 days, gradually subsiding but his original symptoms returned.

CASE 4.—G. G., white female, aged 24, became depressed and frightened after the birth of a child. She developed marked feelings of unreality and depersonalization, expressing the feeling that she was dead and had no sensations. She subsequently became extremely agitated and confused and was brought to Bellevue 6 months after the child was born. Closer questioning revealed that she had had some of these symptoms even before the birth of the child. While at a private sanitarium before she came to Bellevue she appeared to have had some hallucinatory experiences. There were different viewpoints as to her diagnosis. Some felt she was a depersonalization neurosis, others a depression or a schizophrenia. Shock treatment was instituted 3 times a week, and this patient was given intravenous amytal. Some anxiety was expressed even with the first few treatments but she improved quite rapidly, seemed brighter, began to experience sensation, felt better subjectively. After the sixth treatment, patient was very much improved, made plans for the future and shock treatment was discontinued after the ninth treatment. She continued to feel quite well for a few days but slipped and within 11 days treatment was instituted again. This time, too, the patient improved quite rapidly and after 12 grand mals, treatment was discontinued. Six days later the patient became very excited, disturbed, destructive and aggressive and had to be transferred to the disturbed ward. While there she was disheveled, restless, confused, hallucinated and grimaced frequently. She would bang on the walls, disrobe, had frequent outbursts of laughter, salivated and soiled herself. After 10 days of this behavior the patient was transferred to a state hospital. A report from that institution revealed that she improved very rapidly after admission and was discharged 1½ months later. The psychotic episode was apparently of 2 or 3 weeks' duration. Interestingly enough, she was there diagnosed as a catatonic dementia præcox. For one year subsequent to that she was on parole and well adjusted. One and one-half years after treatment, the patient appeared to be in good condition. This patient had therefore received 2 courses of shock treatment, 9 grand mals in one and 12 in another. Six days later she developed a psychotic episode lasting apparently a few weeks. This picture impressed some observers as being a catatonic excitement.

DISCUSSION

We believe that the pictures described above represent something more than the usual organic confusion arising in the course of treatment and persisting for some period afterwards. It appears that after treatment was discontinued, the patient showed the usual memory defects and confusion, differing very little from that seen in our other cases. In a few of those who developed psychotic reactions, the subjective reaction to the memory difficulties and confusion was more pronounced. A few days after treatment was discontinued, an acute psychotic picture developed which lasted a few days to a few weeks. These psychotic episodes took different forms but all had in common the feature that the patients were disturbed, agitated, restless, aggressive and destructive. In some instances they were demanding, suspicious and paranoid. One case subsequently seen at a state hospital was diagnosed there as a catatonic dementia præcox. During the psychotic episode the productions occasionally revealed evidence of emotional conflict, indications of which were surmised before the psychotic episode developed. For instance, the patient who had a picture dominated by features of depersonalization and feelings of unreality, revealed, the day before his psychosis developed, material to indicate concern about a heterosexual relationship. During his psychosis, this came out in full bloom, expressing itself at times in a wish for castration. In the patient, whose depression developed right before he was supposed to be married, the psychotic productions revealed hatred of his future wife and the wish to avoid marriage. In the woman who showed features of depersonalization and depression following the birth of a child, there became evident during the psychotic reaction, marked feelings of rejection by her husband who she felt preferred her child, and the anxiety that as time went by she would be completely rejected. In the main, however, the gross clinical picture of the psychotic episode was different from the psychiatric picture seen before shock treatment was instituted.

That the development of the psychotic reaction did not have any direct correlation with the degree of confusion was also manifested by the fact that sometimes as much as one week elapsed after treatment was terminated before the psychosis developed. During this interval the confusion frequently lessened. It might very well be that as the confusion subsided, the patient's awareness of his defects became more pronounced and

perhaps therefore more disturbing to him. However, one had the feeling that the patient's subjective reaction to the confusion was more pronounced. It was as if the tolerance of the ego to the defects and to the body image distortions was not as good in these patients. In some of our very confused patients who objectively revealed much more disturbance, we frequently found a good natured amusement at their own defects if there was any subjective reaction at all. The euphoria that one frequently meets after shock treatment did not appear to be as marked in the patients who developed psychotic reactions. It was also interesting to note that the psychotic episodes frequently developed at night quite suddenly with a feeling of apprehension, and in some instances this developed into a paranoid reaction.

There did not appear to be any direct correlation between the number of treatments received and the development of psychosis. It was, however, our experience that more of the patients receiving daily shock treatment developed this reaction than did those who received treatment three times a week, though a comparison is unfair because of inadequate control. Perhaps the rest day between treatments helped the patient marshal his resources, permitting a certain amount of reintegration. This very likely is of assistance in the patient's handling of his confusion. It might also be pointed out that if the number of treatments given is considered solely responsible for the development of this syndrome, it leaves unanswered the question why other patients under the same treatment procedure did not develop such reactions. In most instances we gave fewer treatments than recommended by some authors(4).

It appeared to us that the organic changes caused by electroshock were not entirely responsible for the development of the psychotic episodes. The fundamental personality structure presenting a reaction to the organic damage appeared to be quite important. This is a frequently observed fact in studies of the usual organic psychosis. In their study, Levy *et al.*(5) indicated that in several cases there was no direct correlation between the clinical effects of shock treatment and the degree of change in cerebral function as demonstrated by electroencephalogram. We could not however ascertain any specific features of the clinical picture or the prepsychotic personality structure to indicate when such reactions were to be expected. In several of our cases where features of depersonalization and ideas of unreality were prominent in the clinical picture, such psychotic reactions developed. In one patient a previous history revealed that during a pneumonia several years before, the patient developed an hallucinatory reaction. But this same patient during a subsequent course of malaria treatment had no gross psychotic reaction.

The question could be raised as to whether the large doses of amytal given could have contributed to the development of the psychotic picture. All of our shock treated patients over a number of years have received sodium amytal. The majority did not develop psychotic reactions.

The observations reported above seem to indicate that one must not be too hasty in forming an opinion about the progress of a case in shock treatment when such a superimposed clinical syndrome develops. All of the developing psychotic reactions subsided and the most that happened was that the patient was left with his previous psychiatric picture. Most of our cases also improved as regards their orginal clinical complaints with the clearing of the engrafted psychotic picture. One must therefore wait before reinstituting shock therapy once having discontinued it when such a reaction develops.

SUMMARY

We have presented some evidence to illustrate an interesting by-product of electric shock treatment. A few days after shock treatment was terminated, a psychotic reaction appeared, differing in its gross clinical manifestations from the clinical picture which was present when shock treatment was started. It differs from the state of confusion that one usually meets in the course of shock treatment. Such late post-treatment psychotic episodes last anywhere from a few days to a few weeks and then subside. With its evanescence the original clinical complaints of the patient usually subsided.

It was felt that the picture could not be entirely explained alone by organic brain damage and to a large extent was dependent upon the personality structure of the patient.

The technical suggestion is made that when such a reaction develops, treatment should not be immediately reinstituted. One should wait, a few weeks if necessary, in view of the fact that in all our patients the psychotic episode subsided.

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THE PROPHYLAXIS OF CARDIAC COMPLICATIONS IN ELECTRO-SHOCK THERAPY

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In considering the fatalities which occur during the course of electroshock therapy, cardiac disease of one type or another occupies a preeminent place. In the author's experience with this treatment as a calculated risk in patients with cardiac disease, many have been treated with impunity. Although there have been no fatalities, three patients had complications, two developing cardiac decompensation and one developing a left bundle branch block. Through the past several years, it has been established that depressions of later life are often amenable to electroshock therapy and it is this age period in which cardiovascular diseases occupy a position of considerable importance. In most centers, electrocardiograms are routinely taken, and if these are reported as showing no abnormalities, electroshock is generally given without hesitation in the absence of clinical evidence of cardiac disease. In many cases, however, there are more or less important abnormalities noted either in the EKG or clinically, which form the basis of rejection of patients for this therapy, or at least cause considerable hesitation in the institution of the treatment. Without this form of therapy a large number of these depressions go on to a chronic state, and in many instances there is a delicate balance between the possibility of chronicity, on the one hand and fatal results on the other.

Earlier observations both clinically, and experimentally in animals, indicate that auricular and ventricular fibrillation as well as various types of cardiac arrhythmias, frequently occur during electroshock applications. It is probable that these phenomena are in part pathophysiological results of stimulation of both the sympathetic and parasympathetic nervous systems; and it is possible that such stimulation in other organs of the body may be concerned in the eventual recovery of the subjects. Other cardiac complications are due to changes in the vascular system induced by the treatment superimposed on diseases of the arteries. It was considered that the prevention of these untoward cardiac occurrences and the neutralization of the most harmful effects, predominantly cardiac in origin, might best be accomplished by a direct action on the heart or its vascular structures, rather than through drugs influencing the autonomic nervous system. The major drugs utilized for their effect on the heart are digitalis, quinidine, strophanthin and the vasodilator group such as nitroglycerin, sodium nitrite, theobromine and aminophyllin. Of these digitalis does not correct arrhythmias but acts primarily on the A-V node to slow the heart rate and increase the strength of the beat. Quinidine, on the other hand, corrects fibrillation by slowing conduction and increasing the refractory period and permits the heart to assume the normal rhythm. The vasodilator group acts on the blood vessels to increase perfusion of the heart. There was insufficient opportunity for a clinical trial of this group of drugs, but on theoretical grounds it may be very useful in coronary artery disease. The author began using quinidine prophylactically in selected cases which showed cardiac abnormalities either clinically or electrocardiographically prior to the institution of electroshock therapy. Case 1, cited below, provided a clinical test for the efficacy of such preliminary medication.

REPORT OF CASES

CASE 1.—H. G. C., age 48, tense, restless, agitated, wringing his hands, suicidal impulses, depersonalization, delusions of guilt and sin. Physical examination showed no abnormality; blood pressure was 130/80; urinalysis, blood count, and blood chemistry were normal. EKG showed PR interval .16. QRS showed low voltage in three classical leads; T flattened and diphasic in lead 2; inverted T in lead 3. After five months, the patient showed no change whatever in his condition and accordingly, electroshock therapy was instituted. Following the first treatment, the patient developed auricular fibrillation and his blood pressure fell to 95/50. EKG showed auricular rate of about 500 and a ventricular rate of 170. QRS complexes in lead 1 showed minor, and in lead 2, well-marked slurring. Lead 2 had low

voltage with notched QRS. Quinidine sulfate, .8 Gm. (12 gr.) daily, were given and within 36 hours the cardiac rhythm became regular and remained regular after the discontinuance of quinidine 10 days later. Blood pressure was 140/80.

Six months later, the patient's condition still showed no improvement and electroshock was reinstituted. For 5 days prior to this, he received quinidine sulfate .8 Gms. (12 gr.) daily and throughout the course of treatment. He received 9 shock treatments in all with two incomplete reactions. The EKG taken 2 weeks after completion of therapy showed PR .14; QRS .08; slight left axis deviation; slight slurring of QRS; T3 in lead 2, inverted: QRS in the fourth lead diphasic. There was one premature beat, probably A-V nodal in origin. The clinical picture showed a temporary improvement followed by a relapse, but there has been no indication of any increased cardiac damage in the 4 months since treatment.

CASE 2.—C. H., age 69, developed increasing depression, insomnia, agitation and fearfulness over a period of 3 years since the death of her husband. Made two suicidal attempts. On admission felt she was disgraced, had poisoned children, and was fearful of cancer and syphilis. Had known heart disease for 30 years. Examination showed a loud presystolic murmur over the whole precordium, transmitted to the axilla and the vessels of the neck. Heart was slightly enlarged, the apex being delimited just beyond the midclavicular line. Blood pressure was 115/80. Arteriosclerosis was minimal, the eyegrounds showing slight tortuosity of the arteries (grade 1). There was no evidence of decompensation. Pulse was consistently above 100 and fluctuated considerably. Examination otherwise was essentially negative. EKG showed no abnormalities with normal sinus rhythm, PR .16, QRS .08, axis normal. Digitalis .1 Gm. (1½ gr.) t.i.d. was given for one week prior to the institution of electroshock therapy to permit of rapid digitalization should this become necessary. After the 9th treatment the patient developed periodic irregularities in cardiac rhythm which had no consistent pattern. Digitalis was discontinued and quinidine sulphate started, and the patient maintained with .8 Gm. (12 gr.) daily till the termination of treatment. She received 13 shock treatments in all. The clinical examination of the heart showed no change, the EKG remained normal and B.P. was 140/80. She made some improvement and was returned to her home at this time. When last seen 6 months following treatment no change had occurred in the cardiac status.

Three additional patients, ages 55, 64 and 65 were given prophylactic treatment with quinidine sulfate prior to institution of electroshock treatment. All had electrocardiographic evidence of cardiac damage consisting of increased PR interval, slurring of QRS complexes and changes in the T wave. One patient had a hypertension of 220/120. These patients were given from .4 to .8 Gm. (6 to 12 gr.) of quinidine sulfate daily for 5 to 9 days prior to electroshock treatment. The number of treatments ranged from 6 to 14, No complications were noted in these patients.

CONCLUSION

The cases cited suggest that premedication in patients with cardiac disease is an effective prophylaxis for the development of cardiac complications. Often where cardiac complications occur they are preceded by various arrhythmias and these may be controlled with quinidine sulfate. Vasodilator drugs may be useful in preventing cardiac complications of vascular origin but there was no opportunity to test this. No mention in the literature of such premedication has come to attention and the writer has had no opportunity in recent years of developing this work. A wider trial and close observation of such premedication by workers now engaged in this field may enable more patients in the older age group with psychiatric conditions to obtain the benefit of electroshock treatment.

ORGANIC AND HYSTERICAL ANESTHESIA

A Method of Differential Diagnosis with the Aid of the Galvanic Skin Response [1]

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The military neuropsychiatrist is frequently faced with the necessity for differentiating between anesthesias following peripheral nerve injuries and the hysterical anesthesias. Often this differential diagnosis is both a difficult and important decision. Pure hysterical reactions, combat precipitated, are frequently observed in the form of a paralysis or anesthesia; hysterical symptoms concommitant with organic lesions may be seen even more frequently. Particularly in the latter group, the differential diagnosis may be very difficult. Hysterical and organic symptoms and signs at times can hardly be separated from each other by mere clinical judgment. This is certainly true for a sign so subjective as an anesthesia.

In war casualties, patterns of hysterical anesthesia often very closely resemble organic patterns, while in civilian practice the hysterical anesthesia is generally recognized by its characteristic shapes (*e.g.*, complete hemianesthesia, glove and stocking pattern, etc.). In hysterical soldiers, particularly those who at one time had organic nerve injuries, the anesthesia patterns simulate the organic pattern which actually often existed for a brief time following the injury.

The differential diagnosis is important because the treatment for an organic disability—often enough operation or reoperation—radically differs from the treatment for the hysterical anesthesia, which obviously consists of psychotherapy. Operations on hysterical patients, which unfortunately are not uncommon, constitute a severe error endangering the patient's health and adjustment.

The galvanic skin response (GSR) was chosen as an objective method for differentiating the organic from the hysterical anesthesia because a GSR cannot be elicited if the sensory pathway of the galvanic skin reflex is interrupted by a complete anatomical or physiological disruption of the peripheral nerve. Abolition of the GSR in cats with experimental cord transsections was described by Richter(1). In striking contrast to the GSR in organic anesthesia the GSR in hysterical anesthesia or in hypnotically induced anesthesia was found to be present by Levine(2, 3), Sears(4), Sears and Cohen(5), Myasishchev(6). In view of these findings it was assumed that the method might be utilized in an objective differential diagnosis of the hysterical and organic anesthesias. The galvanic skin response was examined on 8 patients with organic anesthesias due to traumatic neuropathies and cord lesions and on 7 patients with hysterical anesthesias; the clinical and experimental findings are reported.

METHOD

The GSR to the tactile stimuli of pin prick and light touch was recorded with the help of a Grass electroencephalograph, model IIA. This method is unpublished and was suggested by Luther Mays(7), Capt., A. G. D., A. U. S. The stimuli consisted of pin prick of moderate intensity, and of light touch with a hair brush, as commonly employed in clinical neurological examinations. The test was designed for the greatest simplicity. No attempt was made to use stimuli of different intensities. This approach seems to be experimentally valid since the GSR showed little difference between the pin prick of moderate and of extreme intensity; in fact the galvanic skin response was quite similar when such different sensory modalities as touch and pain were tested. Therefore, and in consideration of the present clinical problem an "all or none" response seemed more satisfactory than the employment of a quantitatively graded test.

During the test the patient, with eyes closed, either rested comfortably on a bed or sat in an easy chair. All disturbing noises

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and conversation were avoided, and all communications between the administrator of the stimuli and the technician were made by hand signals. The bioelectric currents were obtained from a normal palm, and in the rare instances of hyperiodrotic palms from the forearm. The electrodes were the small solder electrodes, which are standard in electroencephalography. Electrode-jelly was applied to the palm and the active electrode secured over it with adhesive tape. The neutral electrode was fastened in similar fashion to the forearm, with the exception that the skin under this neutral electrode was

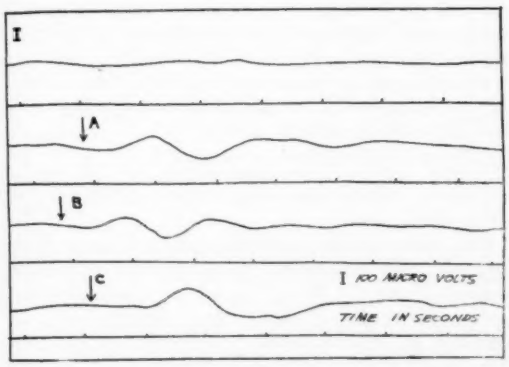

FIG. 1.—Galvanic skin response recorded with Grass electroencephalograph. Normal subject.

I. Curve with subject relaxed.
At A: response to repetition of two digits.
At B: response to loud noise.
At C: subject was asked whether she considers herself normal.

lightly scratched to connect this electrode to the body fluids. Push pull recording was used. It proved advantageous to employ attenuations from 7 to 10; to fix the low frequency filter on medium (M) and the high frequency filter on four (4) in order to filter out muscle action currents. The curve which was obtained by this method is illustrated in Fig. 1. It is a fairly straight line with only occasional flat sways. The great variety of stimuli which regularly produces such GSR were: flashes of light; sudden noises; talking to the patient, particularly with mention of emotionally exciting issues; and mental tests, such as repetition of digits. Such fluctuations were also seen after coughing, throat clearing and sighing. Occasionally fluctuations occurred without any known stimuli. All these stimuli are known to elicit the GSR and have been reported by Landis (8, 9) and others.

The stimuli used for the experimental testing of tactile functions—*i.e.*, pin prick and light touch of normal areas—always elicited the same and typical deflection from the base line. Stimuli were applied after all deflections of the curve disappeared and the base line was flat. When testing fingers and toes with a pin one must take care to avoid movement of the limb. The latency between stimulus and response was from 1-3 seconds, which compares well with the galvanic skin response recorded by standard methods. In a number of patients skin resistance was tested by Richter's (10, 11, 12, 13, 14) method and the relation of sympathetic and sensory function compared. The electroencephalograph appears to be a very suitable instrument to record the GSR, *i.e.*, the bioelectric changes accompanying sweat gland and vascular activities characteristic of a normally functioning sympathetic system.

OBSERVATIONS

Two groups of patients were chosen for examination of the GSR. In Group I, were ten [2] patients with traumatic anesthesias. This group I consisted of patients whose neurological examination left no doubt that they suffered from complete interruptions of the sensory pathways. Motor and sensory findings were typical of the respective organic lesions. In all patients the organic character of the lesions was proved by surgical exploration.

The GSR in this group is illustrated in Fig. 2. Stimulation of the anesthetic area (A) does not elicit any response, while stimulation of the normal area elicits the normal GSR (B). The same is true for stimulation of anesthetic (C) and normal (D) skin with a fine hair brush. Such clear differentiation was obtained in all ten patients. The absence of GSR was observed only in the completely anesthetic zone. It is noteworthy that with the first return of sensitivity, vaguely corresponding to so-called protopathic sensibility the GSR reappeared.

The GSR could also be obtained from

[2] Only 8 are here abstracted.

the hypesthetic areas surrounding the anesthetic center.

GROUP I.—*Patients with complete lesions of sensory pathways of peripheral nerves, or of spinal cord.*

CASE 1.—Traumatic neuropathy right median nerve, complete.

This patient was injured in combat on 24 Aug. 1944 by a shrapnel fragment one inch above the right wrist. The median nerve was completely transsected and a typical median nerve paralysis and anesthesia resulted. The proximal phalanx of thumb and index finger and the volar area between them were completely anesthetic to pin prick and touch while the middle phalanges of fingers II, III

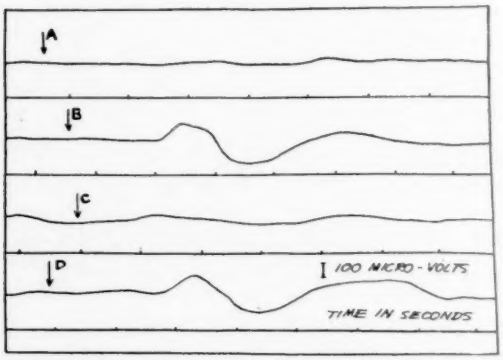

FIG. 2.—Galvanic skin response recorded with Grass electroencephalograph.

Diagnosis: Traumatic neuropathy right median nerve, complete. (Case 1.)

At A: Stimulation of anesthetic area by pin prick.

At B: Stimulation of symmetrical normal area by pin prick.

At C: Stimulation of anesthetic area by light touch.

At D: Stimulation of symmetrical normal area by light touch.

and the median half of the 4th finger and the corresponding areas of the palm were hypesthetic. On 15 March 1945 a neurorraphy was performed and a large neuroma removed.

On stimulation of the anesthetic area by pin prick and light touch the GSR could not be obtained; from normal areas it could be obtained.

CASE 2.—Traumatic neuropathy left ulnar nerve, complete.

This patient was wounded in action on 31 Jan. 1944 by shell fragments which fractured the left ulna slightly below the elbow joint. The patient had a typical ulnar nerve paralysis and anesthesia of the ulnar part of the hand. On surgical exploration, the ulnar nerve was found to be imbedded in dense scar tissue and a neurolysis was performed. The patient subsequently had some return of his motor function, but the anesthesia and hypesthesia remained unchanged. A small portion of the dorsal and volar areas at the ulnar edge of the hand was completely anesthetic to pin prick and touch, a small surrounding area was hypesthetic. Tests with the Richter dermometer method showed a clearly outlined area of high resistance of ulnar nerve distribution.

The GSR could not be elicited by stimulation of the anesthetic area.

CASE 3.—Traumatic neuropathy of left brachial plexus, complete.

This patient had a jeep accident on 21 July 1944 which resulted in skull fracture and laceration of the brain, fracture of the scapula and of the transverse process of the 7th cervical vertebra. He suffered a complete avulsion of the nerve roots from C5 to D1 with complete flaccid paralysis of the muscles of the left shoulder and upper extremities and marked atrophy of the involved muscles. The patient had a complete anesthesia to pin prick and touch of his upper extremity with the exception of a small area on the inner aspect of the forearm D2). Dermometric examination showed high resistance in the anesthetic area.

GSR in the anesthetic area absent.

CASE 4.—Traumatic neuropathy of left sciatic nerve, complete.

This patient was wounded in action on 1 Sept. 1944. A rifle bullet penetrated his left thigh and severed the sciatic nerve. On 1 Feb. 1945 a neurorraphy of the sciatic nerve was performed in an overseas general hospital. On examination (10 Mar. 1945) the patient had a complete paralysis of the muscles innervated by his common peroneal and tibial nerves. He had complete anesthesia to pin prick and touch involving the areas innervated by the common and superficial peroneal, sural, calcanean, median and lateral plantar nerves; the central portion of this area was completely anesthesic; the border areas-hypesthetic. Dermometry findings in this patient were normal.

GSR in the anesthetic area absent.

CASE 5.—Traumatic neuropathy, left common peroneal nerve, complete.

On 23 May 1944 a shell fragment penetrated the left thigh of the patient, resulting in paralysis of the common peroneal portion of the sciatic nerve. On exploration (17 July 1944) the common peroneal portion was found to be imbedded in scar tissue and had to be sectioned and sutured. On examination (5 Mar. 1945) the patient had a complete peroneal nerve paralysis. He had anesthesia to touch and pin of the lateral aspect of the lower leg surrounded by a hypesthetic zone. Dermometry revealed normal findings.

GSR was absent in the anesthetic zone.

CASE 6.—Traumatic neuropathy, right tibial and common peroneal nerve, complete; ischemic paralysis.

This patient received a gunshot wound of the upper thigh with injury of the femoral artery, formation of an aneurysm and lesion of the tibial and common peroneal nerves. The patient had a

complete paralysis of all muscles of his foot with marked atrophy of the lower leg and foot. There was anesthesia to pin prick and light touch of the toes, the sole and the anterior third of the dorsum of the foot and the lower half of the lateral aspect of the foot.

The GSR could not be elicited in the anesthetic zone.

CASE 7.—Traumatic neuropathy right brachial plexus, complete; ischemic paralysis.

Patient was wounded in action on 7 Jan. 1945, by shell fragment which injured the right infraclavicular region, resulting in an aneurysm of the axillary artery and paralysis of the brachial plexus. On 23 Jan. 1945 a false aneurysm of the axillary artery was removed, and the artery ligated. On examination, 21 April 1945, the patient suffered from a complete paralysis of muscles innervated by the musculocutaneous, radial, median and ulnar nerves with considerable atrophy of these muscles. The anesthesia to pin and touch corresponded to the segments from C5 to D1. Skin resistance in the anesthetic area was high and clearly demarcated.

CASE 8.—Traumatic myelopathy at the level of the seventh dorsal segment.

This patient was hit by shell fragment on 12 July 1944, the missile fractured the 6th dorsal vertebrae and injured the spinal cord. On the same day a laminectomy at the 6th dorsal vertebra was performed and a complete transsection of the spinal cord at the level of D7 was found. On examination the patient had a complete spastic paraplegia in extension, incontinence of urine, loss of volitional urination, sexual impotence; knee and ankle jerks were hyperactive; abdominal and cremasteric reflexes absent; on plantar stimulation the patient responded with a withdrawal reflex; there was complete anesthesia to all sensory modalities below D7.

On tactile stimulation of the anesthetic zone, the GSR could not be elicited.

The second group consisted of seven patients who responded to psychological trauma, mostly combat incurred, with hysterical anesthesias and other hysterical symptoms. The diagnosis in these patients was usually based on the following criteria:

1. Neuroanatomically insignificant injury.
2. Atypical, changing and bizzare motor and sensory findings.
3. Lack of trophic changes.
4. Normal reflexes.
5. Frequent evidence of hysterical personality traits.
6. Disappearance of symptoms after psychotherapy.

In all patients of this group a normal GSR could be elicited from the anesthetic zone as well as from the normal areas; this is illustrated and explained in Fig. 3.

GROUP II: *Patients with hysterical anesthesias.*

CASE 9.—Hysterical bandshaped hypesthesia of left lower leg.

This patient was wounded in action on 14 Dec. 1944. A shell fragment caused a superficial wound of the anteriomedial surface of his left lower leg. The patient was able to walk 50 yards; then noted that his leg suddenly became completely paralyzed and numb in the shape of a band from the knee to the ankle. On examination the patient was able to walk and to stand on his toes but was able to execute only flicker-like movements of his toes on the examining table; otherwise the lower leg and foot were completely paralyzed. Knee and ankle jerks, cremasteric and plantar reflexes were normal. He had a bandshaped anesthetic zone from his knee to his ankle for all modalities. After hypnotherapy the patient recovered from his anesthesia and paralysis.

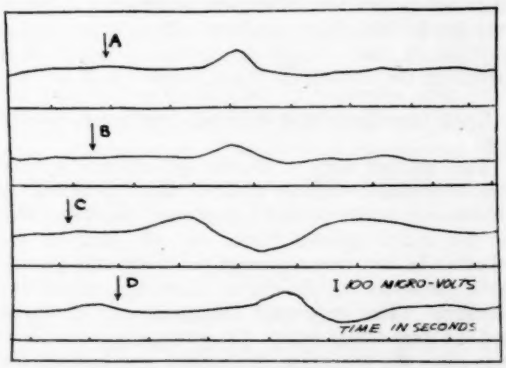

FIG. 3.—Galvanic skin response recorded with Grass electroencephalograph.

Diagnosis: Hysterical bandshaped anesthesia of left lower leg. (Case 11.)

At A: Stimulation of anesthetic area by pin prick.

At B: Stimulation of symmetrical normal area by pin prick.

At C: Stimulation of anesthetic area by light touch.

At D: Stimulation of symmetrical normal area by light touch.

GSR of the anesthetic zone normal.

CASE 10.—Hysterical anesthesia of irregular shape of the anterior aspect of the right lower leg.

After one week in combat, patient received a superficial wound of his right lower leg. His leg was completely paralyzed following this injury and he developed a stocking type anesthesia of his lower leg. At the time of examination he had recovered some of his motility and walked with a bizarre gait lifting his foot very high from the ground. Knee and ankle jerks, abdominal, cre-

masteric and plantar reflexes were normal. He had a complete anesthesia of irregular shape of the anterior part of his lower leg. The patient seemed to be a tense, anxious individual who had considerable difficulty in maintaining an outwardly calm appearance. After two sessions of hypnotic treatment, all symptoms disappeared. GSR normal.

CASE 11.—Hysterical anesthesia in region of right shoulder.

Patient received a superficial wound of his right shoulder when hit by a shell fragment on 26 July 1944. Afterwards he was unable to move his right shoulder in any direction and complained about complete lack of feeling in the shoulder region. The motility of the shoulder returned gradually while the numbness remained up to the time of examination. Neurological findings were completely negative except for a complete anesthesia to touch and pin of the right shoulder region, considerably varying in size. After discussion of his combat situation, the anesthesia disappeared. GSR normal.

CASE 12.—Hysterical stocking anesthesia of right leg.

This patient with 3 months of military service was accidentally injured while in target practice. A ricocheting bullet caused a depressed skull fracture of his right parietal bone; he was not certain whether he lost consciousness but there was a complete paralysis of his right upper and lower extremities. The depressed fragment was removed and the dura found intact. On recovering consciousness after the operation, the patient regained all the strength in his arm but was unable to move his foot and toes, although he could walk, tiptoe and stand on his "paralyzed" foot. He had a complete stocking anesthesia up to his knees. Following a few orienting discussions he regained all his motor and sensory functions. GSR normal.

CASE 13.—Hysterical glove anesthesia of right forearm.

This patient was wounded in action on 19 Dec. 1944 when he received a perforating wound of his right forearm with a compound comminuted fracture of the ulna. He was in a cast for 10 weeks, on removal of the cast, he was unable to move his arm and hand except for some trembling motion of his fingers. When examined on 15 March 1945, no atrophy was found; biceps, triceps and radial jerks were normal. He had a glove type anesthesia for all modalities which cut off sharply at the shoulder joint. After some psychotherapeutic sessions the patient regained his motility and normal feeling. GSR normal.

CASE 14.—Hysterical anesthesia of left upper extremity.

While in combat on 26 August 1944, this patient noted a complete paralysis and numbness of his upper left extremity after carrying a mortar piece strapped to his left shoulder for many hours. A diagnosis of complete brachial plexus paralysis was made and the patient was evacuated to the Zone of Interior. On examination on 15 February 1945, he was found to be unable to move the left upper extremity except for a flickering movement of his middle finger; there was no atrophy; biceps, triceps and radial jerks were normal. He had a complete anesthesia of the whole arm and hand for all modalities. After three hours of hypnotherapy, the patient had normal use of his left upper extremity and complete return of his sensory function. GSR normal.

CASE 15.—Hysterical paraplegia and anesthesia below tenth dorsal segment.

This soldier's wife was admitted as a neurological emergency. She developed a low back pain one day before admission. On the following morning she suddenly lost all strength in her legs and fell. On admission she had a complete flaccid paraplegia of both lower extremities. She was completely anesthetic below the 10th dorsal segment. Her knee and ankle jerks could not be elicited. Abdominal, anal and plantar reflexes were absent. Rectal sphincter tone was normal. She was incontinent and unable to urinate voluntarily. The diagnostic possibilities of epidural abscess, hematomyelia, transverse myelitis and hysterical reaction were considered. Lumbar puncture was performed. Initial pressure was 140; normal dynamics; total protein 27; no cells; WAR neg.; gold curve normal. Blood and urine findings were normal. A cystometrogram revealed an atonic bladder. On the following day the patient developed a complete flaccid paralysis and glove anesthesia of her left upper extremity, which disappeared completely on the third day. In subsequent interviews it was learned that the symptoms developed when she learned of her husband's return from overseas duty; while he was gone, the patient had an illegitimate child. After one session of hypnotherapy this emotionally very unstable, suggestible patient lost her anesthesia and was able to move her legs and to urinate. GSR normal.

DISCUSSION

In eight patients with complete traumatic interruption of the sensory pathway, the GSR could not be elicited by pin prick and light touch of the anesthetic areas. This indicates interruption of the reflex arc of the GSR which in its afferent part is identical with the sensory pathway. This identity of the afferent sympathetic pathway and the sensory pathway has been proved before in examinations of the vasoconstrictor response by Marquis and Williams(15), and Stürup, Bolton, Williams and Carmichael(16).

The GSR is absent only if the stimulated area is completely anesthetic. In the hypesthetic border areas a GSR could be elicited; furthermore it was possible to elicit it in patients with return of so-called protopathic sensibility. Thus the described method is

not suitable for testing of hypesthetic areas unless necessary quantitative refinements of the method and careful correlations between degree of hypesthesia and magnitude of the response can be worked out.

In the hysterical patients the GSR could always be elicited from the anesthetic areas. This corroborates the results of Levine's(2, 3) tests with hypnotised and hysterical patients. It is in agreement with Williams and Marquis' theoretical expectation that sympathetic responses (GSR and vasoconstrictor response) in hysterical anesthesia and in hypnotically induced anesthesia should not be altered; in the author's opinion this is not contradicted by Sears(4) because his reported quantitative changes do not seem to be significant.

The findings on hysterical patients corroborate Levine's(2, 3) opinion that hysterical anesthesias and hypnotically induced sensory loss are a result of inattention to the sensory input from the anesthetic area. There is no evidence for Hurst's(17) and his collaborators' conclusion that hysterical persons may produce a block in the reflex arc which results in abolition of the reflex.

Among the patients tested in this series there was no clear-cut case of malingering. However, in some patients the degree of dissociation of the symptom was almost on a conscious level. In others with more definite hysterical reactions the degree of repression was more profound. The sympathetic responses in "malingering" and "hysterical" reactions, however, were identical and did not permit any differential diagnosis between these two forms of maladjustment.

The reported simple method of recording the GSR with the Grass electroencephalograph provides a practical objective differentiation between hysterical and organic anesthesia. The only other method which contributes to such a differential diagnosis is Richter's dermometer test. It must be stressed that the measurement of skin resistance tests the capacity of a sympathetic response while the above described GSR method tests the tactile stimulus. From the current literature (Richter and collaborators)(10, 11, 12, 13, 14) and the experiences noted at Northington General Hospital, it seems that sensory and sympathetic recovery do not always coincide. A pure test of the sensory function, therefore, is quite desirable. Of course, it is possible to examine the sympathetic function with the Grass electroencephalograph if the leads are placed in the anesthetic areas and thus the abnormal sympathetic "responses" instead of the sensory "stimulus" is tested. Such examinations on spinal cord cases are being carried out at present.

In our patients the GSR was elicited by tactile stimuli and a differential diagnosis between functional and organic anesthesias was made possible. Naturally the method could be applied to other sensory disturbances as blindness and deafness. Furthermore, the GSR can be used to detect actual blindness, or deafness, in patients who will deny their disease as described by Redlich and Dorsey(18). The usefulness of the method in such a case was suggested by Marquis(19).

SUMMARY

1. The galvanic skin response (GSR) elicited by pin prick and light touch was tested in seven patients with organic (traumatic) interruption of the peripheral sensory pathway; in one patient with complete (traumatic) transsection of the spinal cord and in seven patients with hysterical anesthesias.

2. A new method, of recording the GSR with the Grass electroencephalograph, as suggested by Luther Mays, is described and used.

3. In patients with organic anesthesias due to complete peripheral nerve and complete cord lesions no GSR could be obtained on stimulation of the anesthetic zone by pin prick and light touch.

4. In all hysterical patients the GSR elicited by stimulation of the anesthetic zone by pin prick and light touch was normal.

5. Thus the described test offers an objective method of differential diagnosis between organic and functional anesthesias.

6. The results of this investigation support the thesis that functional anesthesia is a result of inattention to the sensory input from the anesthetic area. Such inattention (or dissociation) may be, in rare and extreme cases, of a conscious nature as in

malingering; or due to various degrees of repression from the conscious as in hysterical reactions. However, sympathetic responses in malingering and hysterical reactions do not differ.

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AGEING AND DETOXICATION

Studies in Hippuric Acid Synthesis During Psychoses of the Involutional and Old Age Group [1]

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INTRODUCTION

The purpose of this investigation was to study the detoxifying function of the organism, measured by its capacity to detoxify benzoic acid (Quick, 1940), in patients of the higher age group suffering from mental disorders.

The idea that certain psychoses are, at least in part, associated with faulty detoxication, is old. It was especially held that in certain toxic psychoses the cerebral function is secondarily impaired by liver damage. Hepatic dysfunction allows harmful intermediary products of metabolism to appear which would normally be disposed of otherwise; this may be one of the mechanisms of the production of mental disorder. A good deal of these discussions in the early German and French literature is purely hypothetical.

It was only during the last twelve years that these concepts have assumed a more definite shape. Quastel and Wheatley (1933) demonstrated that commonly occurring amines which are normally detoxified in the liver inhibit the respiration of brain tissue like narcotic drugs. Quastel and Wales (1938) showed that the synthesis of hippuric acid as tested by the oral administration of sodium benzoate is impaired in catatonic patients. This important finding has been under discussion in much the same manner as that of Gjessing (1932) on the nitrogen metabolism in certain forms of catatonia; there is no agreement between subsequent investigators as to its validity (Ström-Olsen, Greville and Lennon, 1938, Davies and Hughes, 1940, Finkelman, Hora, Sherman and Horwitt, 1940, Michael, Borkovic and Looney, 1944).

It is known that the capacity of the liver to detoxify sodium benzoate is normally diminished in old people who show no pathological physical or mental impairment (Rafsky and Newman, 1943). It was therefore important to determine the detoxifying capacity in those patients who suffer from psychoses of the involuntional and senile period.

MATERIAL

Seventy-one patients were investigated, in whom there was no evidence of liver disease, and who showed no gross metabolic disorders on clinical examination and from fasting blood sugar and cholesterol levels. Forty-seven of these were 45 years or older, and 30 of this group were in the seventh decade or older. Several patients were examined on repeated occasions, for instance before and after a course of electric shock treatment. Mainly those patients were chosen who during the involutional period or during old age showed either organic psychoses or affective disorders. Old patients with long standing chronic disorders such as schizophrenia were excluded. Only one of the patients (No. 7, He) was bedridden because of myocardial disease, but without evidence of congestive failure. Those remaining had no physical sickness except for the common handicaps of old age.

METHOD

The instructions of Quick (1940) and subsequent investigators were followed. The patient was given a light breakfast and one hour later 1.77 gm. of sodium benzoate was injected intravenously over a period of 5 minutes; after this the patient was given two tumblers of water. The patient urinated or was catheterized, after exactly one hour, and amount of hippuric acid in the total volume of urine was determined.

RESULTS

The results are shown in Table 1.

[1] From the Department of Psychiatry, McGill University, the Allan Memorial Institute of Psychiatry, and the Verdun Protestant Hospital.

DISCUSSION

Before pointing out the actual findings in such a comparatively large and heterogeneous group, it is most important to consider the disturbing influence of all those factors which might distort the interpretation. These are: physical disease, particularly liver diseases, renal insufficiency, variation in nutritional status and body size and the total amount of urine excreted during the test.

There was a good number of patients with arterial hypertension within the group, but Table I shows that patients with high blood pressure do not show more impairment of hippuric acid than the remaining patients.

There are also some patients with evidence

TABLE I

No.	Name	Sex	Age	Wgt.	Blood pressure	Diagnosis	Hippuric acid	A.C. blood sugar	NPN	Blood cholesterol	Remarks
1	Wi	F	48	105	110/70	Depression	1.09	94	30	...	
2	Be	F	35	125	.....	Reactive depression	1.32	105	28	194	
3	Lo	F	28	120	.....	Psychopathic personality	0.96	80	20	.....	
4	Sw	F	56	109	104/60	Involutional melancholia	0.81	118	28	.....	
5	De	F	40	100	.....	Morphine addict	1.40	88	29	.....	
6	Le	F	62	147	130/70	Involutional melancholia	0.63	123	27	200	
7	He	F	66	122	140/70	Involutional melancholia	0.68	107	37	.....	
8	Br	F	67	142	186/96	Depression	0.42	112	33	200	BSP 5%
9	Mc	F	49	143	142/82	Reactive depression	1.30	147	28	.....	
10	St	F	57	146	108/78	Recurrent depression	0.95	118	17	251	
11	Gu	F	48	172	112/85	Involutional melancholia	0.48	137	23	248	
12	Ap	F	31	113	100/70	Recurrent depression	1.20	92	25	.....	
13	Wi	F	64	132	130/78	Psychoneurosis	0.63	114	18	.....	Bilirubin normal
14	Fi	F	37	94	.....	Anxiety neurosis	0.90	94	18	267	Bilirubin 0.25%, BSP 2%
15	Sc	F	32	114	.....	Anxiety neurosis	0.80	88	25	164	
16	Ho	F	49	130	.....	Schizophrenia, paranoid	0.57	.....	.....	.....	
17	Pa	F	38	119	100/70	Depression	1.03	88	31	.....	
18	Wa	F	48	125	.....	Involutional psychosis	0.64	104	26	183	BSP 6%
19	Hi	F	35	119	100/70	Reactive depression	1.19	.....	.....	.....	
20	Wo	F	65	90	135/100	Depression	0.58	109	29	139	BSP 2%, Bilirubin 0.3%
21	Du	F	72	120	143/80	Senile dementia	0.47	110	.....	166	
22	Bu	F	64	110	153/88	Senile dementia	0.44	96	38	187	
23	Sa	F	72	92	125/58	Depression	1.06	79	25	122	
24	Ho	F	73	97	124/78	Senile dementia	0.18	94	17	180	
25	Th	F	84	100	182/90	Senile dementia	0.43	130	15	129	
26	Ma	F	62	100	156/70	Involutional melancholia	0.97	106	.....	173	
27	Co	F	64	116	230/100	Hypertensive encephalopathy	0.68	83	22	126	
28	Co	F	68	103	125/70	Senile dementia	0.47	88	33	117	
29	Ri	F	62	91	.....	Depression	0.80	96	22	187	
30	Bo	F	71	98	104/58	Senile dementia	0.28	99	19	269	
31	We	F	69	133	138/58	Depression, parkinsonism	0.47	122	22	212	
32	Br	F	67	157	160/95	Hypertensive encephalopathy	1.02	.....	.....	.....	
33	Ko	F	30	105	90/60	Depression	0.58	.....	.....	.....	
34	Sc	F	72	146	150/70	Depression	0.97	80	.....	207	
35	Wa	F	65	97	155/85	Involutional melancholia	0.70	106	15	183	
36	Cl	F	45	123	135/85	Reactive depression	1.05	88	31	225	
37	O'B	F	35	103	.....	Epileptic equivalents	0.97	105	.....	.....	
38	Co	F	32	110	.....	Anxiety neurosis	1.21	104	21	137	
39	Am	F	43	142	145/100	Involutional melancholia	0.63	124	20	200	
40	Br	M	29	146	120/82	Anxiety neurosis	1.56	101	35	232	
41	Do	M	30	126	150/90	Anxiety neurosis	0.90	103	27	103	
42	Gu	M	36	145	112/78	Recurrent depression	1.13	102	20	125	
43	Wi	M	36	163	140/70	Anxiety neurosis	0.62	96	31	122	
44	Th	M	36	142	120/80	Psychoneurosis	1.26	103	25	170	
45	Du	M	38	153	130/90	Recurrent depression	1.33	119	27	188	
46	El	M	38	143	120/80	Anxiety neurosis	1.10	101	20	149	
47	St	M	38	130	130/80	General paresis	1.40	97	40	219	
48	Da	M	40	167	120/85	Schizophrenia, paranoid	1.48	107	20	245	
49	Ri	M	43	163	120/84	Anxiety neurosis	0.56	113	28	188	
50	Bo	M	44	136	138/90	Involutional melancholia	1.40	98	19	163	
51	Le	M	44	119	116/70	Reactive depression	1.12	85	20	190	
52	Ma	M	51	134	130/80	Anxiety neurosis	1.04	105	22	214	
53	Jo	M	56	140	140/70	Anxiety neurosis	0.69	97	40	219	
54	Co	M	57	165	112/70	Recurrent depression	1.20	92	26	197	
55	Ba	M	58	121	130/80	Involutional melancholia	0.81	114	22	253	
56	Lo	M	58	112	134/64	Compulsive obsessional state	0.54	105	30	180	
57	Ac	M	59	124	.....	Involutional melancholia	0.85	86	32	236	
58	Dr	M	61	139	174/76	Involutional melancholia	0.92	103	21	165	
59	Br	M	64	125	180/140	Reactive depression	1.08	101	29	184	
60	Ro	M	67	169	138/94	Depression	0.63	.....	.....	.....	Bilirubin normal
61	Mc	M	68	144	210/120	Hypertensive encephalopathy	0.78	126	48	237	
62	Fo	M	71	128	180/115	Hypertensive encephalopathy	0.49	89	30	118	
63	Os	M	71	119	118/80	Compulsive obsessional state	0.78	83	40	238	
64	In	M	75	114	180/80	Hypertensive encephalopathy	0.68	67	31	166	
65	En	M	77	105	115/68	Senile dementia	0.24	97	28	219	
66	Ry	M	81	100	160/80	Hypertensive encephalopathy	0.60	70	32	168	
67	Ba	M	54	180	140/90	Involutional melancholia	0.75	105	.....	222	
68	De	M	60	176	190/110	Recurrent depression	0.70	106	15	141	
69	Je	M	46	145	165/100	Involutional psychosis	0.78	113	.....	172	
70	Do	M	65	138	126/82	Involutional melancholia	0.78	96	.....	185	
71	Mc	M	53	180	.....	Recurrent depression	1.00	83	37	187	

of nitrogen retention (Nos. 7, 22, 61, 63 and 71) but a comparison of the NPN with the amount of hippuric acid synthetized shows that there is no correlation.

It seemed even more important to evaluate the possible relation of the output of hippuric acid to the size of the patient's body. Michael, Borkovic and Looney (1944) have refuted Quastel's findings in catatonic patients on the basis that no diminished power to detoxify could be found in schizophrenia at all if one made allowance for the variation in body size and corrected the findings accordingly. In our series it was found that in distinction to an increasing series of hippuric acid output the figures representing body weight were distributed fortuitously.

Another equally important possible source of error is the amount of urinary excretion during the test. Machella, Helm and Chornock (1942) demonstrated that the output of hippuric acid following administration of sodium benzoate is related to the amount of water excretion during the same time. This could not be confirmed during the present investigation. In plotting out the volume of urine in comparison with the quantity of hippuric acid found in the cases of 60 years and older, it was seen that except for two cases within the higher range of excretion, there was no parallel, and these two cases can still be accepted as chance findings according to probability.

In the present study no investigations were made with reference to nutrition. It is likely that the individual state of nutrition, the diet, especially the proportion and nature of protein and various types of amino acids in the food influence hippuric acid synthesis in the liver. It should be noted that our patients lived under very varied conditions; they were either resident patients at the psychiatric department of a general hospital, or they came from home especially for the test, or they were resident patients of a large provincial mental hospital. Moreover the duration of stay of the resident patients in hospital varied from a few days up to several years. In surveying our material there was no indication whatsoever that these differences in diet influence the results of the test. Considering these findings together with the fact that the results were independent of body weight, we may assume that gross differences in diet and nutritional state can be neglected in the evaluation of our findings.

The standard of normal comparison is based on the reports in the vast literature on the subject, especially on those of Rafsky and Newman (1943) who obtained their results on physically and mentally healthy inmates over 60 of a New York old people's home. We find that 24 of our 30 patients of 60 years or over excrete less than 0.85 gm. This constitutes 80% as compared with 24% of Rafsky and Newman. This means that, regardless of the type of mental disorder, the number of patients with a faulty mechanism of detoxication is more than three times as high as in normal old people. This difference becomes even more striking if we separate the cases of senile dementia from the bulk, in other words, from the old patients with affective disorders or with hypertensive encephalopathy. There are only 5 cases of senile dementia in the present group, and they show conspicuously low values (highest 0.7, lowest 0.18 with an average of 0.33 gms.). This finding has to be interpreted with considerable caution because of the small number of patients and because they belong to the oldest group investigated (only 1 of these 5 patients is under 70 years). If we, however, compare them with the remaining 5 patients who are older than 70 there still remains a great difference (highest value 1.05, lowest 0.49 with an average of 0.78 gms.). If this finding could be confirmed in a larger number it would be important for the problem of senile dementia as a whole. Even then it would be difficult to evaluate the significance of these findings because of the numerous variable factors involved, and there is a great likelihood that a phenomenon like this is an unspecific concomitant of general biological decline rather than one of the specific "causes" of central nervous dysfunction. It has been pointed out that senile dementia is in its origin and course entirely independent of the patient's general circulatory state, and that on the other hand hypertensive encephalopathy seems to be identical with the origin concept of "arteriosclerotic insanity" (Stern, 1941). The latter has a short course with dramatic fluctuations or is an entirely acute illness whereas the former presents a shallow gradual decline. Furthermore, in

the pathogenesis of senile as well as presenile dementia one can observe two components which may appear independently (Stern and Reed, 1945)—one of the "simple wasting" characteristic of ageing, and another one which can be partly reproduced by metabolic and nutritional disorders.

Hence, in order to evaluate the present findings one has to investigate a number of factors. It was shown above that a gross obvious difference in diet can be eliminated as a source of error; nevertheless, one would have to make sure whether these patients with senile dementia eat less vitamins or more carbohydrate and less protein than people of the same age group who are offered the same diet. One would also have to compare the reduction of the weight of the liver commonly seen in old age with that of the liver in patients suffering from senile dementia. Furthermore, the water metabolism of these patients would have to be compared with that of a control group. Disturbances of the water metabolism in senile dementia have never been studied systematically. They may be one of the features of an entire syndrome of which the dementia is only a part; this is suggested by the histology of the cerebral lesions (von Braunmühl, 1933, Alexander and Wu, 1935); on the other hand, under dehydration the hippuric acid test is grossly impaired (Quick, 1944).

These are only a few notes to indicate the complexity of the factors involved. Therefore, for the time being we have to confine ourselves to the statement that the detoxifying power as determined by hippuric acid synthesis is very markedly impaired in this group of patients, and have to refrain from interpreting this finding.

This investigation was made with the special purpose of studying only the problem of detoxication and not with reference to liver function in general. Therefore, no other liver function tests were carried out. Only occasionally, when there was a low value of hippuric acid, was the liver function checked by the bromsulphalein test and bilirubin values in the blood, and no impairment was found with these methods.

The findings in those cases in which the hippuric acid test was carried out at different stages of their illness are inconclusive. These will be followed up in a study on a broader basis. However, one case is noteworthy; it is that of a woman (Jo. 42 years) with neurosyphilis who, during an extreme state of psychomotor excitement and under sodium amytal anæsthesia conjugated only a trace of hippuric acid (urinary excretion 262 ccs.), and 6 days later, while she had become quiet and rational after electric shock treatment, had a normal hippuric acid conjugation (1.00 gms. urinary excretion 64 ccs.). She had not gained any weight dur-

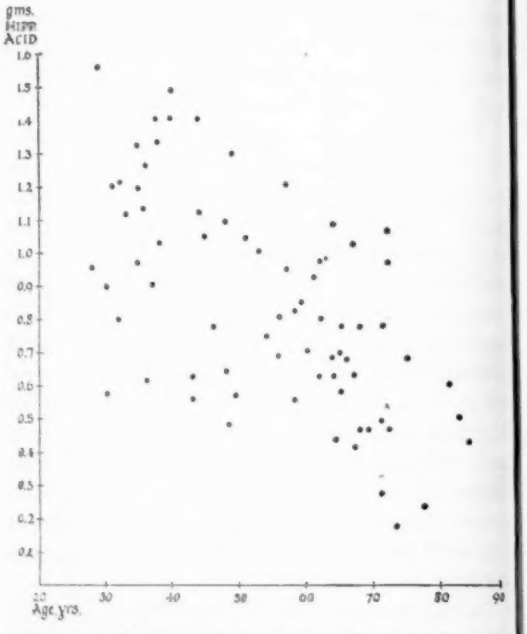

FIG. 1.—The age of the patients is plotted out in comparison to hippuric acid excretion. There is a definite tendency to decrease with advancing age.

ing these days; on the contrary there had been a loss from 80 to 76 pounds.

This study warrants a systematic continuation; experiments with controlled diet and follow-up studies of single cases through various phases may throw more light on the significance of the present findings.

SUMMARY

The detoxifying capacity of the organism during psychoses of the involutional and old age period was investigated by Quick's intravenous hippuric acid test. Seventy-one patients were studied, 48 of whom were 45 years and older; 30 of these were 60 years and older.

Evidence of faulty detoxication was present in more than three times the number of patients of 60 years and older, than had been found by previous investigators in mentally normal people of the same age group. Moreover, a small group (5) of cases of senile dementia had conspicuously low values, even when compared with patients of the same age suffering from affective disorders or from hypertensive encephalopathy.

A comparison of these cases among themselves shows that gross differences in diet and nutrition, differences in body weight, in blood pressure and in urinary excretion can be neglected as sources of error.

The significance of these findings is discussed.

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PSYCHOANALYSIS AND THE UNCONSCIOUS [1]

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I. THE FOUNDATIONS OF PSYCHOANALYSIS

The invention of psychoanalysis (or psychanalysis) is credited to Sigmund Freud, a Viennese physician who died a few years ago. There was, however, nothing in Freud's system which had not appeared in superstitions which were common several centuries before the beginning of the Christian era. Freud contrived the first system to which the name "psychoanalysis" was applied; but later, other sects of the cult developed, much to Freud's annoyance. The theories (or postulates) on which Freud founded his cult included: (1) The postulate of an unconscious mind or of an unconscious stratum of the mind. (2) The postulate of repressed desires, often called repressed ideas as entities exerting energies. (3) The postulate of an erotic life-force: the *libido*. This third postulate is somewhat inconsistent with the second, but perhaps Freud might have resolved the inconsistency if he had been interested in it. (4) The postulate of dream-contents as symbols of repressed desires. From the Freudian habit of applying the term "sexual" to erotic, parental, filial and genital topics in a comprehensive manner, he came to call his postulates taken together, the "pansexual theory"; which he considered the most important discovery of modern times and compared it with the discovery of the sources of the Nile (a comparison which might well be psychoanalyzed by applying Freud's own methods).

We will discuss these postulates briefly in the order in which we have listed them.

1. The "unconscious" can be understood only by relating it to the "conscious mind" of the psychoanalyst's conception. Desires and ideas are conceived as entities, which can be filed away, like letters in a filing cabinet, and brought out later for examination. This is a concept of the older German psychology derived from the philosophy of Wolfe; Wundt accepted it and called these entities "psychic objects."

The postulate of an unconscious stratum of the mind was quite popular in Freud's generation; it had been introduced into modern philosophy by von Hartmann, who derived it from Schopenhauer. The notion was adopted by literary men and poets, and an excellent presentation of the concept is to be found in Sydney Lanier's poem, "The Marshes of Glynn." Janet, for a time, adopted the notion of an "unconscious" stratum of the mind, but soon abandoned the notion as being of no value for abnormal psychology, either in theory or in practice. Freud sometimes admitted that he derived the notion from Janet, and sometimes denied the indebtedness.

The postulate of the "unconscious" is accepted by all sects of psychoanalysis, and is rejected by psychologists for the same reason for which the "conscious mind" of the psychoanalyst is rejected. Since William James, American psychologists have distinguished consciousness from the contents (or data) of consciousness, and have considered an idea to be not an entity but a process of the response type. To reject the concept of the "unconscious" is to reject psychoanalysis *in toto*.

2. Repressed desires are merely psychoanalytic substitutes for the devils which our forefathers believed could "possess" human beings. Freud and his followers adopted the notion that ideas have energies, and exert their energies. This is the concept of *ideés forcées*, which appeared in French philosophy in or near the 18th century. Janet seems to have adopted the notion in his doctrine of "psychic tension," although Janet's explanations are both confused and confusing. It is possible that Freud derived his notion from Janet, along with the notion of the "unconscious."

Devil possession was the popular explanation for mental aberration in ancient periods, and the belief in devil possession still exists,

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even in the United States. That the repressed desires of the psychoanalysts which they believe upset persons, and try to escape from the "unconscious" stratum of the mind into the "conscious" areas, are the same energetic devils as those of ancient folklore, should be clear to any student of mythology.

3. Concerning the mythical *libido,* there is little that need be said, except that it is a successor to the *psyche* (life-stuff or life-energy) of the ancient Greek culture. The Greeks, however, did not assume that the *psyche* was fundamentally an erotic force.

4. The postulate that dream-contents are symbols of repressed desires is a combination of Plato's theory of dreams with notions of scholars of the 19th century who misinterpreted religious symbols. Plato's theory of dreams is presented in the first section of the ninth book of the "Republic" (Loeb Library, *The Republic,* Vol. II, pp. 335-337). Plato's theory differs from that of Freud by assuming that there is no repression during sleep, whereas Freud assumed that the repressing factor (the censor), is only partially inactive during sleep, so that the repressed desires appear as "symbols" in dreams. That dreams such as Plato describes appear sometimes is admitted by most psychoanalysts; but such dreams are deemed to be exceptional.

For the erotic interpretation of religious symbols, many of which were not erotic when they first appeared, one can turn to writings such as those of A. H. Layard and Payne Knight. Many of the symbols to which these misguided scholars gave erotic interpretations were really symbols of reproduction, which is not the same thing. This confusion of reproductive and erotic processes was continued by Freud, and is continued still by many of his disciples.

Freud's interpretation of symbols followed the principles which were adopted by the misguided scholars who were unfamiliar with the histories of the symbols. Anything long was a symbol of the male organ, and anything hollow was a symbol of the female organs. The Latin cross was a phallic symbol, although reference to it as "the tree" should have shown the symbolists their error. Freud extended the symbolism by including processes of which one dreams. Thus, going upstairs is a symbol of coitus, and falling as dreamed is the same symbol. Some of Freud's interpretations were based on vulgar expressions among German-speaking peoples. While all sects of psychoanalysis seem to accept symbolism, it is not interpreted by all sects as erotic. Adler's sect seems to have diverged in that way; but Jung and his disciples did not.

Since the fundamental postulate of psychoanalysis, in which all sects agree, is that of the "unconscious mind" or the "unconscious," we may well revert to that topic, and consider the ways in which the adjective "unconscious" is used currently in popular speech and writing. That these usages are due to corruption of the popular beliefs by psychoanalysis is possible; but on the other hand it is possible that the psychoanalytic doctrines were suggested by popular usages of the term.

1. Something perceived, thought of, or felt, but not recalled later is said to have been "unconscious," although students in elementary psychology learn that this conclusion is fallacious; that one makes many conscious responses, the contents of which are not remembered and not even recalled; that retrograde amnesia is not confined to pathological cases, but is a feature in the lives of normal persons also.

2. The unexplained or inexplicable is sometimes said to be "unconscious." One does something, thinks of something, or feels in a certain way, but does not know how he came to act, think or feel in that way; so he says he acted, thought or felt "unconsciously." Failure to recall a penultimate idea which by association brought up the final idea does not indicate that the penultimate idea was "unconscious."

3. Impulsive actions are often called "unconscious." One says, "I unconsciously turned to the right," meaning that he turned without intention, without plan or without definite purpose. One of these expressions would better designate the process.

4. In another usage, "unconscious" means inattentive, but does not indicate absence of consciousness. The statement, "I walked unconsciously, thinking of something else," does not mean that the person was walking in an "unconscious" condition; if he was

thinking, he was conscious, since thinking is one way of being conscious, as psychologists use the term "conscious." A correct statement would be, "I was thinking of something, and not attending to my walking." We come across statements which seem to imply "unconscious" seeing or hearing, when the actual meaning is inattention to certain items in the visual field or inattentive perception of certain sounds. Attention is always selective, and attention to one item usually precludes attention to other items.

5. Reactions which have become automatic; that is, which have become so habitual that no process which could reasonably be called "thinking" need intervene between stimulation and action, are sometimes called "unconscious." Such automatic actions may be terminal features of responses which are either perceptual or ideational. Thus, if one person makes a move as if to strike another, the second person may put up his hand to avert the blow, or may dodge to escape it, with no intervening thought such as, "He is attacking me," or, "I must dodge," occurring. That the person would seek to escape the blow unless he were conscious of the threat is an absurd assumption. To assume that habitual perceptual responses are "unconscious" would lead to the conclusion that all conscious responses are "unconscious."

6. There is one usage of the term "unconscious" which is fundamentally sound, although misinterpreted by psychoanalysts. If an item of which you were formerly conscious cannot be recalled, you are unconscious of that item, no matter what else you may be conscious of. If you can imagine the item after someone has described it to you, then you are conscious of it, even if you do not remember it; but so long as you cannot imagine the item, you are unconscious of it in the psychological sense of the term "unconscious." To say that what you could not recall at one time, but later could recall, was "in the unconscious" in the intervening period is, to use metaphorical language to express the simple fact that whereas at one time you could not make the conscious response of recalling the item, you could later make the necessary response. For one who believes that contents of consciousness are "psychic objects," which can be preserved like letters in a file, the language of course is not metaphorical. The "unconscious" it seems is believed by psychoanalysts to be a stratum of the mind in which psychic objects are kept on file, but this tenet of faith is rejected by psychologists.

Considering the general features of psychoanalysis, we may point out that explanation in terms of supernatural concepts has its advantages. For one thing, the explanations are final, since they are based on concepts behind which it is forbidden to go. The old-time explanation of behavior in terms of instincts had this advantage; what is an instinct and how does it determine behavior? Well, an instinct is whatever is necessary to produce the behavior. In the same way, a devil possessing a person is a being able to produce the responses it actually does produce. Behind such explanations one could not go. To doubt the reality of devils and their possession of human beings is heresy. In the same way, from the psychoanalytical point of view, to doubt the "unconscious," the libido and the energetic action of repressed desires is heresy. The old theological doctrine, "You must believe in order that you may understand," has been adopted by the psychoanalysts. If you do not accept psychoanalysis, you cannot possibly understand it, is the statement often encountered. "Lord I believe, help thou my unbelief" is the theme.

Psychoanalysis, derived from ancient superstitions, is really a religious cult, and patients are required to accept its tenets in order that they may be cured. Critics such as myself are not regarded as competent because they obviously do not accept the tenets of the cult. If one claims that he has no repressed desires, the answer is: You have no conscious desires which are unsatisfied. That proves that the desires are repressed; if they are not conscious then they must be unconscious.

Psychoanalysts, of course, do not admit that their devils are supernatural beings, but claim them as natural features of the human being. In the same way, ancient peoples assumed devils as entities of the natural world, interacting with human beings

in a natural way. The distinction between the natural and the supernatural had not been made by the ancients. Any force or entity which was believed to exist, and to have causal relations with the natural world was conceived as "natural." In similar fashion, persons in central Pennsylvania who believe in "hexing," and who may employ a professional "hexer" to put a "hex" on an enemy; or may employ a "hexer" to counteract a "hex" which he believes has been put on him, consider "hexing" as a procedure which is as natural as is the procedure in canning fruit or stirring up a cake.

It is only from the scientific point of view that the distinction is drawn between the natural and the supernatural. When you call a belief in some entity or some occurrence superstitious, you mean that you do not believe that the alleged entity exists, or that the alleged occurrence was real. You would readily admit that the content of the belief you call "superstitious" is supernatural. On the other hand, you might believe in some entity, the existence of which can neither be proved nor disproved, in which case your belief could not be classed as superstitious. Theologians have long differed as to whether the God in whom they believe is a natural Being or a supernatural Being. Since neither the existence nor the nonexistence of God can be proved scientifically, the belief of neither group can be called "superstitious." Psychoanalysts, on the other hand, agree that the devils in which they believe are natural, just as did their ancient predecessors, and as the believers in "hexing" consider the procedure to be natural. From the point of view of psychology, however, the concepts of the "unconscious," of the libido and of the devilish "complexes" are concepts of supernatural entities and forces, and belief in these concepts is superstitious.

There are two advantages of explanations based on concepts of the supernatural. *First,* a practitioner who follows the tenets of a religious cult is less apt to be exposed as a charlatan than is one who is presumed to base his work on scientifically established facts and principles. Obviously, persons who are not well educated are not able to probe into the alleged supernatural bases of phenomena, although persons of better education may be sceptical. In ancient times a person who was *semantikos* (skilled in the interpretations of omens) had a soft racket. Religious medicine today has even a softer racket.

Second, in modern times, employment of a supernaturally based system does not require high intelligence or high education. In ancient times, on the other hand, a semanticist, or an oracle maker had to be both intelligent and well educated. His clientele was made up, for the most part, of men of importance: generals who wished to know when and where to attack the enemy; rulers presenting problems of state; wealthy men, in a period when wealth went with intelligence and education. The maker of oracles, moreover, had to be well oriented in regard to current events in foreign lands from which personages or their deputies might come to consult the oracle, for devoid of sound information, the oracle maker might be caught in a serious slip. The oracle maker also had to be shrewd enough to formulate his oracles, the statements ascribed to the god, in such a way that they would be valid, however the events might turn out.

The oracle given from Delphi to the King of Lydia to the effect that if he fought the Persians a great empire would be destroyed, was a safe guess; but it was safe because the maker of the oracle (as distinguished from the pythoness who gave it), knew enough about both nations to be fairly certain that in any event, one of the combatants would be destroyed. No stupid person dealing with such clientele could have "gotten away with it."

The routine semanticists who read the omens from the entrails of sheep or other animals sacrificed, perhaps, did not have to be so smart or so well informed; but they had to be well up on the practical aspects of the situations for which they read the omens, in order to maintain their reputations and protect their rackets. If one read the omens as favorable to attack on the enemy, and then disaster occurred, his reputation declined and his racket was imperiled.

Whatever may have been the requirements imposed on the ancient semanticists

and exorcists (casters-out-of-devils), no such requirements are laid on their successors. All that a psychoanalyst needs is a "union card" (an M. D. and admission to practice), followed by memorization of the terms and the tenets of the cult. Some M. D.'s with no previous training have accomplished this in less than two months. Training in medicine? The kind of medical training is of little importance, because the psychoanalyst, however trained in medicine, does not use his medical knowledge or medical skill, but depends on his psychoanalytic theories.

"Explaining" phenomena on a supernatural basis produces complications. Cults split into sects, based on subsidiary concepts and postulates. As schisms appear, the public is apt to become more sceptical, because of motivation to look behind the supernatural explanations to find what facts, if any, the myths really represent. The very development of psychoanalysis may indeed weaken it, and prepare for its elimination. What protects it is its lucrative aspect, for it is far more profitable than were any of the ancient systems of magic.

The development of a miraculous concept may lead to the assimilation of factual materials, quite aside from the explanations given. The concept of a Zeus beginning storms by hurling thunder bolts from a mountain top was based on valid observations. Thunder storms are more frequent in mountainous regions than on lowlands. In the regions in which the Zeus explanation grew up, it was noted that rains commenced in the higher mountain areas and might extend to the lowlands, and that clouds hung around the mountain peaks. Locating the thunder god on Mt. Olympus, Mt. Sinai, Mt. Ida or whatever high mountain was adjacent to the area, represents a connection of factors in storm-production which is accepted today by meteorologists. The connection of these factors, however, was not explained by the superstition, but on the contrary, explanation was hindered thereby.

Psychoanalysts also have assimilated to their concepts and postulates a number of facts well known to psychologists, along with popular notions which psychologists reject. The established facts, however, are distorted by assimilation to a superstitious theory. No important psychological facts have been discovered by use of psychoanalytical methods, except insofar as psychoanalysts have discovered things of which they were previously ignorant, but which were familiar to psychologists and other educated persons. All myth-making involves the absorption into the myth of established facts, and the absorption of other myths.

II. Applications of Psychoanalysis

Freud developed his system primarily for the treatment of hysteria which was frequent in occurrence in his era, although for reasons which are well known it is a rarity at present. Freud seems to have first attempted the hypnotic therapy of Charcot and Janet, but not being a good hypnotist he abandoned that method and apparently was influenced by the method of psychological analysis which the Swiss physician, Dubois, had developed. By combining this method with ancient superstitions, psychoanalysis was created.

Applications to other than therapy soon appeared. Not only religion, but also art, history, mythology and eventually geometry were "explained" as products of desires repressed into the "unconscious." The symbolism developed for interpretation of dreams was extended to "explain" the accidents and bunglings of "Every Day Life." In Freud's book by that title there are many entertaining stories related in which the obvious psychological explanations are ignored, psychoanalytic "explanations" being substituted.

Many persons are more interested in the problem as to whether psychoanalysis, when applied to pathological cases, really "works," than they are in the critical consideration of its principles. Many "cures" of psychopathic conditions are claimed by psychoanalysts and are often documented by case-histories. As Janet has said, no accumulation of case-histories can possibly prove the validity of a psychotherapeutic theory, since rival systems have equally impressive collections of case-histories. Janet further says that it is probable that all systems of psychotherapy succeed with some cases. The difficulty with case histories is that they do not describe the actual techniques, but only those parts

which bear on the tenets of the cult. As Janet says, most systems do much the same things with their patients. Among these methods are:

1. Indoctrination—teaching patients the tenets of the healing-cult. This may be intellectually stimulating, and may distract the patient from his troubles.
2. Sympathy, which the patient craves, even if he pays for it.
3. Belief in the curative effects of the system. That faith is an important factor, every general practitioner knows. Induction into a healing-cult is comparable in its effects to initiation into the ancient mysteries.

A method which is restricted to psychoanalysis is that of "transfer": erotic attachment of the patient to the practitioner. Such "transfer" may be helpful in some cases, as a change in the patient's desires, but is a dangerous procedure in any case. There is however a practical advantage. If the patient is "in love" with the practitioner, he will continue treatment as long as possible in order to be in the company of the beloved one.

Further questions in regard to case-histories include the following:

1. Was the patient really "cured," or were his symptoms merely altered?
2. Was the patient really afflicted with the disorder attributed to him? In cures reported by some religious healing-cults, there apparently has been no competent diagnosis; the patient thought he had such and such a disorder, and reported himself as "cured." (This may not be true of psychoanalyzed cases.)
3. If the patient was not "cured," was his condition made worse?

As regards the evil effects of psychoanalysis, there are several points which should be considered, in addition to the danger of "transfer."

1. The characteristic trait of psychopathic patients is introspection (self-examination). This trait is increased by psychoanalytic techniques, especially if the patient is instructed to introspect in periods between interviews. The technique may develop the trait in a patient previously free from it. Removal of this trait is a difficult task for the psychologist. Often a neurotic patient who develops the introspective trait becomes an introvert, and since he avoids contact with other persons, he may appear to be cured—he is less troublesome to other persons, but is still a neurotic.
2. A "complex" built up in a patient may be accepted and become an obsession. The case may then be abandoned by the psychoanalyst and is a difficult case for a psychologist, who has to undo the work of the psychoanalyst in order to gain a start. I have found these cases the most difficult of the ones left for psychologists to care for. The abandonment is sometimes due to the practitioner's inability to deal with the case; sometimes to the simple fact that the patient had become unable to pay the fees for treatment.

Some years ago I presented a paper before the American Psychological Association in which I advanced the theory that if a "complex" were built up in a patient and his sources of worry were associated with it, being used to build the devil's nest, as it were; and then the devil were exorcised, it might take the nest with it and all would be well; but that if the devil could not be exorcised, then the condition of the patient would be worse than before. At the end of the session, the then head of the Boston Psychopathic Hospital came to me to say that what I had presented was not a mere theory, that they had many cases of the sort I had described. Since then, I have encountered such cases myself.

III. The Problem of Repression

The principle which seems to be approved by all sects of psychoanalysis is that desires should not be repressed, since repressing a desire shoves it down into the "unconscious" cess-pool of the mind where its energy is still operative and where it may be more damaging than if it were in the "conscious mind." By the implications of some writers, in fact, a desire is damaging only when it is repressed.

While there are desires which are sound and sensible, which can be satisfied without difficulty and which should be satisfied, there are other desires, the satisfactions of which are impracticable. For some of these desires, satisfaction would be stupid or silly; for others satisfaction would involve injustice to others, and satisfaction of some other desires would be dangerous. What is a person to do when afflicted with a desire, the satisfaction of which is impracticable? Psychology advises him to repress it, but psychoanalysis says no!

Suppose for example one is in a small social group to which a child is being shown off by having him play the piano. In such a situation one may well have the desire to arise and say in a loud voice, "Phooey! This is terrible!" Such conduct, however, would wound the feelings of the child and his parents, and would be socially disadvantageous to the performer. What a normal person does in such circumstances is to chuckle to himself and think how much fun it would be to make the remark, but he doesn't make it. He now has an idea of a course of action, but the desire has ceased. A desire to murder some one may be handled in the same way. One may still have the idea that the murder would be beneficial, but will have no desire to commit the murder.

The only thing to do about a desire, the satisfaction of which is impracticable, is to get rid of the desire (to repress it), since a desire is a response-process for modern psychologists, not a thing. When the process ceases, the desire is gone. To repress a desire, it may be useful to look at it from the humorous point of view. Another method is that which psychoanalysts call "sublimation"—turning the attention away from the content of the desire to other contents and other topics. If you consciously attend to other topics, you may develop other desires, and the troublesome one will come less frequently and will be less intense when it does recur. This principle has long been known to psychologists. A third, but more difficult way of repressing desires, is the application of the technique of "negative practice."

The worst way in which to combat a desire is to make a direct effort to stop it. Effort is as inefficacious for this purpose as it is in other instances. The failure of effort to cease desiring is probably the source of the psychoanalytic doctrine that repression is dangerous. What the psychoanalysts mean, in their confused way, is that effort to repress a desire is damaging, because the effort does not repress it, but keeps it alive and causes it to receive even more attention. If by effort to repress a desire it could really be made unconscious, then effort would be something of which we would highly approve, for a desire which is unconscious is one that has been eliminated. Efforts to repress, however, do not result in repression.

Desires can be damaging or beneficial only when they are conscious. The desires which promote the work of artists are called "unconscious" by the psychoanalysts, but are really conscious, in the psychological sense of the term "conscious." The interest of children in fairy-tales was said by one of Freud's duller associates to be due to the "unconscious" desire of the children to have such events occur to them. After reading his nonsense, in astonishment, I consulted children, and found that such desires were fully conscious; that they were well aware of the bases of their interests. It certainly is convenient to be able to call a conscious desire "unconscious" whenever one pleases to do so.

THE PERSONALITY OF THE SUCCESSFUL SOLDIER

MAJOR B. H. McNEEL
NP. Specialist 2 Cdn. Corps

AND

MAJOR T. E. DANCEY
O. C. 1 Cdn. Exhaustion Unit

A considerable amount of theoretical discussion has taken place as to the type of individual who is able to withstand the stresses occurring during the course of a more or less protracted modern campaign. Each of the Anglo-American armies engaged in the recent war evolved some scheme for the screening of men at the enlistment level. The method used by the Canadian Army during 1943 and 1944 was frequently criticised. It was stated that at the enlistment level men were rejected on neuropsychiatric grounds much too frequently and that this rejection was based on theoretical findings. The critics maintained that many of these men would be successful as combatant soldiers. The pre-invasion screening in England was subjected to less criticism, for in addition to such indications as family and early personal history of instability which were subject to differences in interpretation, there were usually current evidences of maladjustment which made it obvious that the man was not a satisfactory soldier. However there were many differences of opinion as to how the "problem child" would behave in battle and this was particularly true of the psychopaths who were considered by many to need only strict discipline in order to become good fighting men. With the test of battle a considerable number of men broke down and were evacuated as exhaustion cases. A large proportion of these were considered as "predictable" casualties because of the neurotic predispositions and psychopathic traits which were admitted in their histories. From this it might be inferred that these casualties could have been prevented by more stringent screening. However other men who had no such histories also broke down and it was our opinion from casual observation of troops that there were men with positive histories who did not become psychiatric casualties. As far as we knew a control series had never been investigated and hence we could not assume that the so-called constitutional features, which we had considered to show a dangerous degree of susceptibility, were necessarily the determining factors in breakdown.

This presentation is a rather cursory study of 200 soldiers who commenced action in the North Western European Theatre on D-Day or within the subsequent month and who were still with their units at the cessation of hostilities.

SOURCE OF MATERIAL

Men from each of the infantry regiments, except one, of 2d and 3d Cdn. Inf. Div. were interviewed at their units. The method of selection of the material is indicated below. The scope of the investigation was limited by time and by the fact that the number of D-Day men remaining with their unit ranged from about 10 to 30 in most regiments.

METHOD OF INVESTIGATION

The study was made on two groups: (a) a selected group of 100 men who had served as active combatants practically continuously throughout the campaign; (b) an unselected group of 100 men whose service with the unit from D-Day may or may not have been limited in type or interrupted by evacuation

The purpose and impersonal significance of the examination was explained to the men before interview. Names and regimental numbers were not taken. Each man was interviewed alone for 15 to 20 minutes and the examination was along the general lines which had been followed with cases at the exhaustion unit except that no physical examination was done. Considerable time was spent on the discussion of battle reactions.

An attempt has been made to assess the personality types, their reaction to stresses and the factors which enabled them to carry on.

STUDY A

Age on enlistment		Age on D-Day	
20 and under	38	20 and under	11
21-25	32	21-25	41
26-30	22	26-30	29
31-35	6	31-35	6
Over 35	2	Over 35	3
	100		100

As is evident from the above a large percentage were in the low age group on enlistment but relatively few were in the low age group when they actually were subjected to battle stress. It is of interest to compare them with the immature youths frequently seen in exhaustion centres. Among the factors responsible for their better adaptation are probably the natural maturing process and their incorporation into their unit during a long period of training with the unit.

Service in the Army

Yrs. of service.....	1-2 yrs.	2-3 yrs.	3-4 yrs.	4-5 yrs.	5 yrs. and over
Number	6	26	20	16	32

(The table of service overseas follows a similar distribution with a one-year shift to the left of the table.)

Only one man in the 100 had been reallocated from another corps (RCE). This is a contrast to the frequent incidence of reallocated men in the series of cases seen in the exhaustion unit.

Family History and Early Environment

The features in family history taken into account were:

(a) Mild nervous traits in the family (14%).

(b) Frankly unstable parents or siblings (6%).

(c) Chronic invalidism (2%).

In addition consideration was given to such home influences as:

(a) Death of parents before subject was 15 years of age (both parents, 3%; one parent, 15%).

(b) Home broken by instability and incompatibility of parents (1%).

(c) Oversolicitous and pampering attitudes in the home, or in contrast, those which fostered self reliance and a sense of responsibility.

This last factor is more difficult to assess but about 75% of the cases reported a conscious emphasis in home training on self reliance and responsibility. About 5% reported lax discipline in the home. In the remainder no definite opinion could be formed but in several cases the fact that the family was a large and harmonious one or that all the members were employed in helping out on the farm indicated that there must have been some atmosphere fostering cooperation and responsibility.

The effect of the death of one parent seems to have depended on the attitude of the other parent. In some cases the home discipline suffered but in other cases the responsibility of the child was increased with a general salutory effect on his development.

Developmental History and Personality Traits

Under this heading a search was made for the so-called neuropathic traits of childhood as well as for fears and undue physical timidity. Seventy-nine gave a negative history. Ten had significant neurotic traits which in 2 cases was combined with definite physical timidity. Six gave a history of minor disorders—occasional nightmares, etc. Five had minor fears only (dark, water, etc.). Fear of height was frequently admitted but not to a pathological degree.

Neurotic tendencies in later life were evident in 8 cases with psychosomatic complaints—chronic headaches, postural dizziness, chronic dyspepsia, etc.

Academic Record—Intelligence

No psychometric testing was done because of time and situational factors. The academic record together with the clinical impression of the man was accepted as a rough gauge of intelligence for comparative purposes (for the purpose of Study B). However it was apparent that its individual value varied

greatly with the locality in which the man was raised and with his station in life and opportunities. In some regiments the degree of literacy was considerably below the generally accepted standards but this did not necessarily indicate inferior intelligence. Of the whole group, 22% had an academic standing of grade VI or less. A few cases in which low academic achievement was due to dull mentality nevertheless had good records as fighting men. Two men who won high praise from their officers and N. C. O.'s had completed grade III with difficulty. One rifleman who was completely illiterate was considered to be an ideal soldier. Further comments on the mentally dull soldier will be made under Study B.

It should be pointed out that chronic truancy from school did not appear in this series.

Sports and Social Activities

Participation in sports and social activities has been considered as significant in indicating good adjustment and freedom from undue timidity in civil life. The present group shows a much higher frequency of participants in competitive sport than did the series seen at the exhaustion unit. However, many of the present group lacked opportunity and a number of the solitary type preferred individual sports and showed social but not physical timidity.

Civilian Work Record

The common occupations were farming, mining and fishing, depending on the locality in which the soldier lived. Lesser numbers were labourers, truck drivers, etc. Few men were engaged at skilled trades, this type possibly having been absorbed into other corps as tradesmen. Eighty-five were never out of work in civil life. Three were students at the time of enlistment. Of the remainder, most had only short periods of unemployment during the depression years and had been employed at the time of enlistment. Several were "odd-job" men. One had alternated between peddling, poolroom and labouring. One sergeant had been a bootlegger. A considerable number had changed employment once or twice, usually for a good reason.

Domestic Situation

Although only 29% of the men were married, we thought it remarkable that there was an almost complete absence of worries about home and we encountered no instance in which the man admitted having marital difficulties while serving in this theatre.

Army Adjustment

Inquiry revealed that only 3 men had fallen out of route marches on more than one occasion; only 5 men had been charged with a major crime and 3 of these charges were in Canada; only 4 men had appeared with any frequency on sick parade. Three of the latter complained of pains in legs and feet and one of headaches from wearing a steel helmet. These got no satisfaction from the R. M. O. so "gave it up as a bad job." As pointed out above some men became successful soldiers in spite of low literacy, although they would have difficulty in qualifying under the training syllabus recently in use in Canada.

STUDY B

For the purposes of Study B, an unselected group of 100 cases was divided into 4 categories: *T group*—those who have spent their total time in this period as active combatants (43); *W group*—those who have been evacuated for wounds and returned to unit (30); *S group*—those who were employed in a support company for the last three months of action (17); *L group*—those whose service was limited to employment in a non-combatant job or had missed a month or two of action for reasons other than wounds (10). Of the W group, 15 were away from units less than two months and 15 more than two months; some missed strenuous action and others were out during long lulls; some were near breakdown when wounded. Of the S group, 12 were in support company from the beginning and 5 had served four to seven months in a rifle company. The policy of employment in the support company varied with the regiment, in some regiments it appears that the support company was viewed as a specialist group whereas in others it was used to a considerable degree as a holding

company for the less stable. We happened on to this study more or less accidently while selecting cases for Study A, when certain personality differences between the groups became apparent. Percentages are of no great statistical value as the series is a small one. However it is felt that the trend can only be shown by giving approximate percentage values.

becoming 'wound prone' is also suggested by the frequency with which wounded men stated that being wounded had saved them from breakdown.

In the S group, there is a rather high rate of dull and inadequate types which may indicate a tendency to place less stable types in less exposed duties. The L group is similar to S group.

	T group (43 cases)	W group (30 cases)	S group (17 cases)	L group (10 cases)
Family History:				
Mild nervous traits	5 (12%)	5 (16%)	4 (23%)	1 (10%)
Frank instability	2 (5%)	6 (20%)	4 (23%)	4 (40%)
Home Influence:				
Death of one parent	5 (12%)	3 (10%)	4 (23%)	0
Death of both parents	2 (5%)	0	0	1 (10%)
Separation or divorce	0	1 (3%)	1 (6%)	0
Good discipline	32 (75%)	10 (33%)	5 (29%)	5 (50%)
Fair discipline	10 (25%)	16 (53%)	5 (29%)	1 (10%)
Lax discipline	1 (2%)	4 (15%)	7 (41%)	4 (40%)

(The word 'discipline' is used to describe home attitudes which instil sense of responsibility and self-reliance.)

	T group	W group	S group	L group
Developmental History and Personality Traits:				
Definite neurotic traits	3 (7%)	12 (40%)	1 (6%)	2 (20%)
Mild neurotic traits	3 (7%)	2 (7%)	1 (6%)	2 (10%)
Significant physical timidity	4 (9%)	3 (10%)	0	0
Academic Standing:				
Grade VI or less	4 (9%)	7 (23%)	4 (24%)	2 (20%)
Grade X or more	8 (19%)	10 (30%)	2 (12%)	1 (10%)
Discipline:				
Minor difficulties at school	5 (12%)	3 (10%)	0	1 (10%)
Minor charges in army	0	4 (16%)	0	1 (10%)
Minor sentences in civil life	1 (2%)	2 (7%)	3 (18%)	1 (10%)

Personality Types

At the time of interview an impression of the personality of each man was recorded. These now seem to be strikingly parallel with the trends indicated in the above tables.

In the T group the predominant types were the well adjusted, the sensitive but progressive, the phlegmatic and the recessive or solitary.

In the W group the rate of marginally neurotic, inadequate, recessive and psychopathic types is high. This raises the question of "accident proneness." In this connection it is of interest to cite the spontaneous comment of one soldier interviewed who stated that he had never run out of the line because he had observed that those who ran back often were hit. The possibility of men

General Comments

Reaction to Battle Stress

It would be of interest to give in the men's own words their comments regarding their reaction to battle stress, the type of action which bothered them most, the type of cover which they felt was most satisfactory and the factors which they felt enabled them to survive. However these will have to be summarised briefly. Only one man in this group stated that he had never been scared, and he seemed somewhat overcompensated. A small group of men of rather phlegmatic temperament stated that they had frequently been frightened but that the fright was only momentary and neither interfered with their efficiency nor affected them later. Over 50%

of the men stated that at some time or other they had felt themselves at the breaking point and in a few cases had actually been L. O. B.[1] for a day or two. Although there were variations, the general experience seemed to be that the excitement of D-Day or the feeling that "it was just like a scheme" prevented fright, but that within the next few days the heavy shelling and loss of comrades brought home the grim reality of battle, and in many cases brought on shakiness under fire. This was followed in some men by an almost complete but gradual adjustment but with a tendency to recurrence in heavy action and with a gradual increase in susceptibility toward the end of the campaign. Many men stressed the effects of hunger. exposure and fatigue, and practically all were agreed that the most disturbing factor was a "bomb wacky" comrade. The men who got along comfortably were those who took everything as it came, who laughed and joked about their grim experiences, or who never thought of them afterwards. However, the imaginative type of man with high morale was often rather outstanding in achievement. Most men preferred any kind of activity to sitting under shelling. Some preferred to take cover in a slit trench, some in a house, and a few preferred to remain in the open. Some men rationalized their preferences, and others laughed at their own irrational feelings such as the increased feeling of safety in a slit trench when it was covered with an antigas cape. In most cases the wounded men stated that on return to action they did not feel adjusted until after one or two attacks. Most were more cautious subsequently, and some never became adjusted. Usually a man became more careful of the type of fire by which he had been injured, sometimes changing his dislike from one type to another after having more than one wound. Most of the men were able to recite numerous experiences of being blown up, grazed, etc., similar to those related by patients admitted to the exhaustion unit. The thing which was difficult to estimate was the accumulation of stresses.

The factors which seemed to support men under stress varied with the men's personalities. These are illustrated by the following fragmentary quotations: "my Pop stuck to his job," "excitement keeps you going," "never wanted to be thought scared," "never took time to think," "thought of my family," "pride I guess," "the job had to be done," "couldn't let the other boys down," "I had definitely in mind that I had had a day and that's all there is to it." A number of men stated definitely that it depends on how one is brought up. In most cases where adjustment was good there seemed to be considerable personal and family pride, a sense of responsibility extending back to early life, and the definite feeling of responsibility to comrades. A number of men stressed the importance of the example of officers and N. C. O.'s. The N. C. O.'s themselves seemed to be more frequently carried along by their responsibilities than submerged by them. Some sort of fatalistic attitude was frequent. A good many men stated that they had been helped by prayer. Some of the more dramatic statements such as "do or die" were made by men who seemed to be overcompensated. One of us noted that French Canadians were more likely to speak of patriotism and duty than were others.

[1] Left out of battle.

CONCLUSION

The number of cases in this survey is too small to justify any conclusions of a statistical nature. However the results of the survey confirm a number of impressions which we have had in casual contacts with considerable numbers of successful officers and soldiers.

In describing the personality of the successful soldier it must be kept in mind that in this study we are dealing with the front-line fighting man below commissioned rank and that in selecting this group we have automatically eliminated on the one hand officers, technical experts, tradesmen and craftsmen, etc., who presumably should be in the higher brackets as regards intelligence rating, academic standing and occupational achievement. On the other hand we have eliminated those who have sought or been placed in labouring, non-combatant or rear area jobs because of mental dullness, emotional inadequacy or other limitations.

It has frequently been suggested that the good soldier is of rather dull mentality and of phlegmatic temperament. In this group

average intelligence appeared with the greatest frequency. Most of the men were of a fairly alert, responsive type and only a relatively small group could be said to be definitely phlegmatic. Most were rather casual in manner and not highly imaginative but gave a history which showed a reasonable degree of persistence and initiative. Most of these men were well socialized, liked companionship, enjoyed sports and had never been unduly timid in a physical sense. This general type we considered as the "norm." Those who departed from this "norm" and yet were good soldiers could be classed chiefly in two groups. The first consisted of the sensitive, highly imaginative types, who were compensated for their greater sensitivity by high ideals, personal pride and urge to self-management. In other words, this group of men though showing tendencies to neurotic types of reaction were carried along by a high, persistent personal morale. The second group consisted of recessive or solitary individuals who gave no history of instability but who had developed solitary habits largely due to the circumstances of early life and who consequently were socially timid but when on their own were quite self-reliant. For the most part the men who were good soldiers showed a common tendency to accept situations and to actively adjust to them, to accept responsibilities and to accept discipline. This tendency is shown in their descriptions of their home life, the rarity of serious breaches of discipline and the general impression of adaptability which they made. The development of such personality trends can probably be explained in the answer which many of these men gave: "it depends on how you are brought up."

The possibility of "wound proneness" was an entirely new one to us which was brought out by the facts presented above. It is obvious that in this study at least, the wounded soldiers show an excessively high rate of neuropathic traits both in family and early personal history.

The problem of the value of the soldier as a fighting man after he has once been wounded has been the topic for considerable debate off the record and is as yet unsettled. However it has been noted that in many cases even minor wounds have apparently caused a "sensitization" to psychogenic disorders.

A discussion of the situational factors which influence the reactions of the soldier will be left for another paper, except that attention is here drawn to the importance of long service with, and incorporation into, the unit in the making of a successful soldier. The rarity of reallocated personnel in this study is remarkable.

The above study was made with the approval of Brigadier C. H. Playfair, C. B. E., E. D., by the above named officers who have served successively as O. C. 1 Cdn. Exhaustion Unit since July, 1944.

ATTITUDES OF SOLDIERS RETURNING FROM OVERSEAS SERVICE

WILLIAM CORWIN, Major, M.C., A.U.S.

The opportunity of seeing large numbers of soldiers returning from overseas service has created fairly general impressions of specific attitudes which they express. These attitudes are of some psychiatric interest, particularly when viewed in their implications for future social adjustments. The soldiers interviewed are primarily Army Air Forces personnel, largely those with duties involving flying. Non-flying personnel are also included, and there appears to be little significant difference in their attitude when compared to flying personnel. Officers and enlisted personnel are represented in this study.

The procedure whereby a soldier returning from overseas (hereinafter a "returnee") comes to psychiatric attention is briefly described. The returnee is granted a furlough of about three weeks. He then reports to an AAF Redistribution Station, where he undergoes physical examination, classification, orientation procedures, and is then assigned to duty. The physical examination is similar in setup to induction station examinations. However, flying regulations require stricter standards for qualification, and the entire examination is oriented from this point of view. At the beginning of his examination, the returnee completes a form in which he lists his duties, combat experience, and checks a list of neuropsychiatric symptoms commonly seen. He also grades himself as to his physical and mental condition on the basis of excellent, good, fair and poor, and notes his desires for further flying duties. He is then interviewed by a flight surgeon, who has had additional neuropsychiatric experience and training at a convalescent hospital. This interviewer obtains information concerning previous history and illnesses, and acts as a psychiatric screening agent, referring the returnee for psychiatric examination when he finds sufficient symptomatology. The soldier proceeds along the examining line, any part of which may also note conditions of psychiatric interest. The psychiatric interview is the terminal examining procedure, and here the returnee's mental status is evaluated, with recommendations for return to duty or hospitalization as indicated.

The material presented in this paper covers several thousand interviews, as a result of which, general impressions were obtained of commonly occurring attitudes among returnees. In order to obtain some statistical indications, 100 officers and 100 enlisted men were selected for more extensive interviews. The only criterion for selection used was that they be free from psychiatric symptoms requiring hospitalization. It was felt that in the latter instances, attitudes would be affected to some extent by the greater degree of anxiety and tension. It should be borne in mind that the majority of returnees exhibit some degree of anxiety and tension, but only a relatively small percentage have these in addition to other symptoms of sufficient severity to interfere with their efficiency so that hospitalization becomes necessary.

The attitudes which the returnees exhibit can be separated into several broad categories:

1. Attitudes Relating to Return to the United States

Enlisted Personnel.—Of the 100 men, 62 were eager to return, giving little or no consideration to rumors of conditions here. Among typical remarks were,—"I've never been any happier,"—"It was Heaven,"—"I still can't believe it." Thirty-two had some anxiety and concern prior to returning, chiefly with regard to rumors they had heard of conditions in this country, how they would be treated and regarded by their families and friends, and concerns over illnesses in their families. Among their remarks, these were not uncommon,—"People might think me unbalanced,"—"Everyone would be looking at me." Six stated they did not wish to return. One had married an English girl and did not wish to leave her. The others wanted

to remain with their units, feeling that they were more comfortable and contented there.

Since return, 95 had apparently made a good adjustment. Typical remark was,—"They can't make it rough enough here." Four others expressed themselves as having some regret because people were too curious, or because of strong feelings of disappointment which they developed following return. One of the 100 regrets his return, and this primarily because his wife is overseas, and he is still skeptical of people's attitudes here.

Officer Personnel.—75 of the 100 felt glad to return, having no anxiety at all. Remarks made were,—"I did not bother with the rumors,"—"Those who did had the wrong attitude, they changed in some way." Twenty were glad to return, but expressed themselves as being worried about how they would be treated, how people would regard them, and were troubled by rumors and family difficulties. Four did not desire to return, either because they wanted to stay on with their unit, or seriously anticipated unpleasant conditions in this country. One declared himself indifferent, returning only to take pilot training.

Following return, 94 expressed themselves as grateful to be back; 6 are unhappy, being affected by conditions as they interpret them, or missing their units; 1 of these is anxious to return to combat because he misses the excitement.

Comment.—There is basically little difference between officer and enlisted personnel in attitudes towards return home and following return, a slightly larger number of enlisted men expressing anxiety prior to return. Approximately 20% of officers, and 30% of enlisted men are disturbed to greater or lesser degree by stories and rumors of their treatment at home, and felt anxiety about other people's attitudes to them. This anxiety is to some extent a reflection of the break in ego-strengthening relationships with their units, and a more or less conscious awareness of further emotional demands to be made upon them by their friends, families and other contacts. There is some indication that the return to earlier conflicts which were partially resolved by the more pressing realities of war is a factor in the resurgence of anxiety. The sympathetic and satisfying welcome they receive, and the relief of pressure from the war situations on the whole, partially overcame this anxiety so that almost all evince pleasure at having returned.

2. Attitudes Relating to Conditions in the United States

Enlisted Personnel.—Fifty-six of 100 are not affected. They feel that nothing is wrong, that conditions are better than when they left, and that they cannot complain when they compare them with their area of combat. Typical remark,—"Everything is so good, I'm a little leary." Forty-four are disturbed and dissatisfied. They speak of civilians not being interested in the war and think only of making money, that they are making no sacrifices, that prices are high, that they are treated badly, and that their friends, and often families, seem like strangers to them. Seventy-three are irritated by labor unrest, strikes and related economic situations. These often reach extreme degrees of bitterness and antagonism. Some go so far as to avoid reading newspapers. They resent and take as personal affronts, the complaints of civilians and the absenteeism of industrial workers, particularly single men who are eligible for army service. Twenty-seven are indifferent and disinterested in such reactions. They are not troubled by anything that goes on, being interested only in their own concerns. Some of these take the attitude that there are two sides to every situation, and do not wish to condemn or judge unfairly.

Officer Personnel.—Fifty-nine of the 100 declare themselves not affected by living conditions. They see no change, or else things are better. People seem more friendly. They have learned to appreciate the advantages we have; 4 are hurt and disappointed, irked by people's attitudes, selfishness, over-optimistic remarks, lack of consideration, high prices, complacency and being taken advantage of. The usual cliche is,—"People don't know there is a war on." Seventy-three are disturbed by labor unrest and strikes. They speak of their distress overseas because of shortages. Typical remark is,—"It makes me so mad I could scream." Twenty-seven are not troubled and attempt to view the

situation fairly by speaking of it as the growth of labor, or are utterly indifferent and unconcerned, being interested solely in their own affairs.

Comment.—Again officer and enlisted personnel show no significant divergence in attitudes. Somewhat less than half are distressed and irked by conditions as they see them; reactions of civilians and economic conditions. Approximately three-quarters are disturbed by labor conditions. This often reaches considerable proportions in resentment and antagonism, being primarily an expression of the threat to their own security which they felt, as well as a failure on the part of the home front to properly appreciate the sacrifices they made. This is of interest when compared with the almost universal feeling of relief and pleasure to be in this country again. It is evident that in a large proportion of the returnees, the mere fact of return does not overcome a sensitivity to anxiety-producing factors. This is corroborated by the crystallization of the syndrome of operational fatigue in many apparently normal returnees some time after return.

3. Attitudes Relating to Military Service

Enlisted Personnel.—Of the 100 men, 43 would leave service immediately if possible. Reasons given include need at home, illness, age and length of service. Some are frank in stating they are fed up with service, and that they want to get out in order to have first opportunity at good jobs which have been offered them; 50 feel impelled to wait until the war is over, stating they would not feel right to leave now, and that there is more for them to do; 5 are ambivalent, and 2 would stay in service after the war, stating they like army life and want to keep on flying.

With regard to further combat service, 51 categorically express their objections, typical remark being,—"God! no, a nightmare in reality,"—"I couldn't stand it." Forty-five are not as emphatic, feeling that they could undertake it after a varying period of time in this country; 2 have no objections at all, but would not want to fly; 2 express a desire for combat, one stating that the war isn't over and that he can still do some good, and the other desiring to go as a pilot.

Ninety-two express themselves as satisfied with the part they played, feeling they did their best; 4 are satisfied with their efforts, but believe they could have done more, with better opportunities; 4 feel they did not do as well as they should, and tend to blame themselves as well as their combat circumstances.

Fifty-six feel that it is only fair that men who have not been overseas should go before they are required to return, stating that all soldiers should have a chance, and that it would be a wonderful experience for them; 33 are of the same opinion, but qualify it with the statement that others should go only if qualified physically and mentally, are adequately trained, or are not needed here; 8 are indifferent and 3 state they would not wish it upon anyone.

Seventy-five feel they have been treated fairly and with consideration within the military set-up, having few, if any, complaints. The complaints expressed are of minor nature and deal primarily with the usual "gripes" connected with rigid military discipline and conditions. Eighteen qualify this fair treatment by expressing some dissatisfaction because of being overseas too long, not receiving adequate recognition and promotion, and because of overuse of authority. Only 7 feel they have been badly treated, chiefly because of lack of promotion, length of overseas service, and restricted opportunities.

Sixty-one state definitely that army service has been of prime advantage to them, giving them a broader outlook on life, maturity, experience, training and stability of character; 27 feel they have both gained and lost by military service, the gains as previously noted, and the loss primarily being in time, economic advantages, and occasionally personal morale and ideals; 7 claim neither loss nor gain; 3 are uncertain, and 2 feel they have gained nothing and have suffered definite personal disadvantages. The extremes are somewhat facetiously exemplified by one stating he had lost only in weight, and another stating he had gained only in weight.

Officer Personnel.—Eleven would leave service immediately, the reasons being need

at home, surfeit or dislike of army life, and economic advantages to be gained; 59 feel they should stay in service until end of war, believing they are needed and seeing no advantage to leaving now; 28 express a desire to remain in service after the war, providing they can retain their commissions and obtain favorable opportunities; 2 are ambivalent.

Forty-one categorically state they desire no further combat service; the reasons given are identical with those of the enlisted personnel. Forty-six would prefer to defer it until later, or until need for their services is manifest; 12 desire to return, finding it more exciting, and less restricting than military service here; 1 is indifferent.

Ninety-one are satisfied with the part they have played; 4 are also satisfied but are more modest, feeling they could have done more; 5 are dissatisfied, stating that their training was wasted. These are primarily bombardiers and navigators who did not play an active rôle in their missions.

Fifty-seven believe soldiers who have not been overseas should go, while 33 others feel the same way, but qualify it with the remarks that only if they are capable and are not needed in the United States; 8 are indifferent, and 2 are categorically opposed to anyone going overseas.

Seventy-nine feel they have been treated with fairness and consideration; 17 others are satisfied on the whole with their treatment, but offer comments concerning dissatisfaction with promotion, type of assignment, and rarely, being "pushed around." Four are definitely dissatisfied, principally because of lack of promotion, favoritism which affected them personally, and length of service overseas.

Seventy-five have gained by army service, chiefly in education, self-confidence and self-respect, discipline, travel, maturity, character, ambition and assurance; 20 have gained, as noted, but feel they have also lost to some extent in time, financial opportunities and personal morale; 3 have neither gained nor lost; 1 is uncertain; 1 has gained nothing, and lost in time and personal opportunities in civil life.

Comment.—Here we see a significant difference in officers and enlisted personnel, a larger number of enlisted men desiring to leave service immediately, and a larger percentage of officers desiring to remain in service after the war. The reasons are linked to the difference in motivations, opportunities, and rewards which officers have, and possibly to standards of selection, responsibilities, and other ego-satisfying factors. More officers evince a desire for return to combat, with fewer expressing strong objections to return. These factors again may be related to the larger gains officers enjoy.

There is basically no difference between officers and enlisted men in personal satisfaction resulting from their own estimate of the part they played in combat, approximately 95% being satisfied.

Again no difference exists in attitudes towards soldiers who have not been overseas, about 90% feeling that these men should go before having to return themselves for a second tour of duty. Interesting is the large percentage, about one-third, who recognize that there may be qualifying factors, such as physical or mental disability, specific need within the United States, and other factors. This is related to their understanding of the need of having dependable men on duty overseas, and to personal experiences of unpleasant nature when some men failed to accept their responsibilities.

Of current interest, is the large number of both officers and enlisted men in approximately the same percentage, 90%, who feel they have received fair treatment, and adequate consideration during service. This correlates closely with the statement that they have primarily benefited from service. Presumably the dangers and conflicts resulting from the combat situation, and the frequently expressed dislike of army life and discipline, do not interfere with their ability to make a judgment concerning advantages to be derived.

4. Attitudes Relating to Personal Situations

Enlisted Personnel.—Seventy-one arrived home to find no personal problems or difficulties facing them; 29 had some anxiety-producing situation awaiting them, primarily illness or death in family, financial distress, and marital disturbance.

Ninety-nine found that their families had been treated well, and no anxiety developed as a result of this factor; 1 found his family living in unfavorable conditions, receiving no assistance, and resulting in anxiety and resentment.

Officer Personnel.—Seventy-eight had no problems to face; 22 were distressed by difficulties, primarily illness or death in family, financial stress and domestic unhappiness.

Ninety-nine felt that their families were treated considerately, while 1 was disturbed because his wife had difficulties in adjusting, without being able to obtain assistance.

Comment.—These factors received attention since it seemed that they would tend to modify or affect the emotional reactions of the individual, and consequently their attitudes and reactions. There is little correlation between these items and other expressed attitudes mentioned. It is a common experience, however, to find that domestic difficulties or family distress of whatever nature tends to activate latent or repressed anxiety, resulting in disabling symptoms. Previously existing neurotic patterns are often found in these individuals.

5. Attitudes Relating to Future Adjustment

Enlisted Personnel.—Seventy-eight of the 100 have specific post-war plans, and of these, 21 plan their own business, 12 expect to return to their farm, 30 to their previous job or one awaiting them, 13 to school, and 2 desire to remain in service. Twenty-two of the 100 are uncertain, and are not making specific plans.

Thirty-one expressly feel they deserve more consideration and attention after the war, expecting specific help from the government, consisting of loans, job priorities, etc. Thirty-nine would like such help if they need it, as in the case of illness or injury; 27 desire no assistance for themselves, stating they want only an opportunity, not charity. However, they feel that soldier assistance plans already established are of advantage for others who need it; 3 are uncertain.

Thirty-five are optimistic regarding post-war conditions, while 37 are pessimistic and skeptical; 10 are uncertain, and 3 are indifferent; 15 feel there will be a boom for a while, but expect a depression within a few years.

Officer Personnel.—Seventy-seven are making specific plans, and of these, 17 expect to have their own business, 1 is returning to his farm, 12 to old jobs or one awaiting them, 26 to school, and 21 wish to remain in service if possible; 23 are uncertain or have no opportunities awaiting them.

Thirty-five desire help and consideration after the war; 28 would ask for such consideration only if needed because of illness or injury; 35 do not desire any help, stating,—"Let me alone,"—"They do not owe me a thing,"—"I'm not a hero." Two are uncertain.

Thirty are optimistic about the post-war world and opportunities, while 36 are pessimistic; 12 are uncertain, 3 are indifferent, and 19 feel that conditions will be good for a few years before a depression develops.

Comment.—Significant differences between officers and enlisted men do not exist in this category except for post-war military service, and plans for future employment. More than three-fourths are making specific plans for the post-war world, yet on the whole, retain a realistic, somewhat skeptical attitude towards post-war developments. The number of enlisted men desiring to return to farming is much greater than of officers. This may be related to previous environment, and the basic difference between officers and enlisted men from the point of view of educational attainments, cultural backgrounds and motivations. Twice as many officers desire to return to school. This difference can be ascribed to essentially the same factors. Many officers were in the process of completing their educations when they volunteered for service. Approximately one-third expect and desire assistance in order to reestablish themselves, while about the same number desire nothing but an opportunity. The assurance of aid if desired or needed, has undoubtedly given encouragement and impetus to specific plans for settling down after the war. The large number of officers desiring to remain in service deserves comment. It is not entirely clear what the motivations are, whether they are the advantages of financial and social

security, especially if a large post-war army is maintained, or the intense desire to fly that is frequently encountered.

Discussion.—There are several considerations to be borne in mind with reference to the soldiers studied. Primarily Air Forces personnel, the men involved are a carefully selected group, generally volunteers, and have attained a relatively greater reward from the point of view of rank, pay, promotions and prestige. They have been subjected to somewhat different stresses both in training and combat than other branches of the armed forces. Hence, the results of this inquiry may not be generally representative, although the Air Forces comprise a considerable portion of the armed services. The fundamental stress on team work and group identification are additional factors which affect attitudes following return. Finally they are men who are free from incapacitating neurotic symptoms.

The psychodynamics of combat stress have been stated by Grinker and Spiegel(1), Hastings *et al.*(2), and Miller(3), and will not be reiterated here. What is of interest from the material studied, deals with immediate attitudes which will affect their adjustment to new assignments within the military set-up and throughout the duration of the war.

It is clear that the average soldier returns to this country with a sense of anticipation and eagerness, often attended by anxiety as to his reception. Arrival home results in further anxiety-producing factors, incidental to the physical and emotional strains of leave. Not uncommonly, family and domestic problems exist which increase the quick and profound development of resentment and hostility to civilians and present social conditions; they add to his already burdened personality and render it more sensitive to further situations. What job he will get, where he will be located, will he be treated well, will he have to return to combat, and when, are the questions he asks. His preoccupations with his future generally do not give him immediate concern, although he is making specific plans in many instances, and has definite ideas as to what he can expect.

It is recognized that these men have been interviewed approximately a month following their return, a period which is generally full of activity and excitement, with little opportunity to effect a harmonious adjustment from an active combat area to an area of relative quiet and peace. Their emotional reactions are still keyed to a high pitch, and basic anxieties are not entirely resolved, and may be aggravated by uncertainties and conflicts on return. To what extent these men will absorb the general attitudes of their environment following assignment and gradual settling down to more fixed and less threatening situations, is still uncertain. It seems probable that their attitudes will be modified to some degree by the inevitable pressure of their environment, and that the longer they remain here, the less acutely will the differences they see now disturb them. Available information indicates that satisfactory assignment tends to promote healthy attitudes towards the military situations, and the programs developed by army authorities are directed to this end. Preventive and therapeutic facilities have been created to aid in the soldier's readjustment and reorientation, and will undoubtedly be expanded and refined.

More distant effects following peace are suggested which will influence to a considerable degree their social and economic relations with the community. These men still contain within them the core of neurotic patterns developed as a result of combat. They will, therefore, continue to be susceptible to the pressures of their environment for varying periods of time. If conditions which develop after the war are unsatisfactory or disturbing, anxiety reactions can be expected with displacement of resentment, hostility and antagonism. The need for identification with groups or other figures will have important social significance if programs for rehabilitation and resettlement of veterans are ineffective. The soldiers seen in this survey are realistic, often disillusioned, and have a frank, practical, matter of fact realization of their rôle in the war and the recompenses they demand from our leaders, not only economically, but politically as well. That this attitude is generally colored by emotions which can be easily prejudiced and distorted is not a reassuring fact. The socio-psychiatric reverberations will undoubtedly be

TABLE I

SUMMARY OF ATTITUDES OF SOLDIERS RETURNING FROM OVERSEAS

	100 officers	100 enlisted men
1. Attitudes Relating to Return to United States:		
Desire to return, without anxiety	75	62
Desire to return, with anxiety.	20	32
No desire to return	4	6
Indifferent	1	0
Do not regret return	94	95
Ambivalent	0	4
Regretted return	6	1
2. Attitudes Relating to Conditions in the United States:		
Disturbed by conditions	41	44
Not disturbed by conditions	59	56
Disturbed by labor unrest	73	73
Indifferent	27	27
3. Attitudes Relating to Military Situations:		
Desire to leave service now	11	43
Desire to leave service at end of war	59	50
Desire to remain in service after war	28	2
Ambivalent	2	5
No desire to return to combat.	41	51
Will accept combat service later	46	45
Desire to return to combat	12	2
Indifferent	1	2
Satisfied with own efforts	91	92
Satisfied with own efforts, but modest	4	4
Dissatisfied with own efforts.	5	4
Soldiers in U. S. should go overseas	57	56
Soldiers in U. S. should go overseas, if qualified	33	33
Soldiers in U. S. should not go overseas	2	3
Indifferent	8	8
Have received fair treatment in service	79	75
Have received fair treatment in service, but have minor complaints	17	18
Dissatisfied with treatment in service	4	7
Have gained by military service	75	61
Have gained and lost by military service	20	27
Neither gain nor loss	3	7
Have lost by military service.	1	2
Uncertain	1	3
4. Attitudes Relating to Personal Situations:		
No personal problems awaiting on arrival	78	71
Personal problems awaiting on arrival	22	29
Family well treated during absence	99	99
Family poorly treated during service	1	1
5. Attitudes Relating to Future Adjustments:		
Specific plans made for future	77	78
No specific plans made for future	23	22
Specific plans — Officers	77	
Specific plans — Enlisted men		78
Own business	17	21
Farm	1	12
Return to job, pre-war or new	12	30
School	26	13
Remain in service	21	2
Desire help and consideration.	35	31
Desire help and consideration, if needed	28	39
Do not desire help and consideration	35	27
Uncertain	2	3
Optimistic about post-war conditions	30	35
Pessimistic about post-war conditions	36	37
Conditions will be good for a while, later bad	19	15
Uncertain	12	10
Indifferent	3	3

considerable, and there is an immediate need for a carefully planned and controlled long range program to deal with these reactions. This is obviously not entirely the responsibility of psychiatry, yet its voice must be effectively heard in the establishment of any projects designed for the social betterment of the veteran and the community.

Summary

1. Interviews with several thousand soldiers of the Army Air Forces reveal the development of specific attitudes towards return home, reaction to conditions found on arrival, further military duties, personal situations, and post-war adjustments.

2. One hundred officers and 100 enlisted men were interviewed in more detail to establish information of statistical value.

3. Significant differences exist between officers and enlisted men only with regard to desire to remain in service.

4. The returning soldier, apparently free from disabling neuropsychiatric symptoms, is found to contain a reservoir of anxiety-producing factors which modifies his outlook, and which provokes the development of resentment and hostility, particularly towards civilians and present social conditions.

5. The immediate and more distant effects of these attitudes are of significance, and require programs designed to effect an adequate adjustment of the soldier to future military duties, and to post-war needs for security and socio-economic stability.

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A BRIEF HISTORY OF FAMILY CARE OF MENTAL PATIENTS IN AMERICA[1]

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In colonial days, before asylums were provided, persons afflicted with mental disorders were cared for in their own homes or in jails or out-buildings or were allowed to wander from place to place without care or supervision except that afforded by sympathetic individuals or families. Family care, as the term is now used, denotes home care in families unrelated to patients, the families usually receiving compensation for the service rendered from the state or from the relatives of patients. Such family care in America is a comparatively recent development. The first mention of similar care that has come to our attention appears in the 9th Annual Report of the State Lunatic Asylum at Utica, written in the year 1851, by Superintendent N. D. Benedict. He stated, "We have one patient attending a boarding school in the city who is still under our care and reports himself weekly at the Asylum"(1). Apparently this experiment led to no further development, but by 1867 the Scotch system of family care, as well as that at Gheel, was beginning to receive attention.

Superintendent John P. Gray, of the Utica Asylum, although not in favor of placing patients in the homes of strangers, commented on the Scotch system in 1867, in these words:

> There are now in Scotland 1,637 harmless insane patients supported in private families. How much better off they are than they would be, aggregated in a great receptacle for incurables.

It was Gray's feeling that many insane poor could be taken care of in their own families "if some stipulated regular price for board was guaranteed them"(2).

For a number of years Gray carried on the policy of sending to their families when feasible such quiet and harmless chronic patients as could safely leave the asylum. He did not favor sending patients to homes other than those of their families, for these reasons:

> The Scotch system . . . . goes farther than has seemed to me advisable. I have very much doubted the propriety of sending this class into any families except their own. They would not only be in danger of neglect, unobserved, but their condition of mental weakness would render them liable to be imposed upon. . . . . While . . . . experience demonstrates the justice and wisdom of taking care of the chronic insane in their own families, where it can be accomplished, I could not advise the adoption of the system of providing for this class in a general way in private homes(3).

In general these were the sentiments of most of the asylum superintendents during this period. In 1879 Dr. A. Marvin Shew, superintendent of Middletown (Connecticut) State Hospital read at the annual meeting of the Association of Medical Superintendents, a report of his visit to Gheel in 1878(4). The paper and the Gheel system of family care were discussed at some length, but the members did not seem favorably impressed with the idea.

In Massachusetts, the State Board of Charity as early as 1867 made a fruitless recommendation to the legislature regarding family care. After repeated agitation on the subject by the State Board, the Massachusetts legislature in 1885 passed a law giving to the State Board authority "to place to board where they deem it expedient, and in suitable families throughout the Commonwealth, insane persons of the quiet, chronic class, ... "

Massachusetts was thus the first state in the United States to inaugurate a system of family care. On August 10, 1882, two patients were boarded out; this number was increased to 29 by January 1, 1886. The undertaking proved successful and was continued(5).

Across the state line from Massachusetts, New York was having difficulties of its own. Dr. Stephen Smith, state commissioner in lunacy, noted with increasing concern the serious overcrowding evident in state hospitals and county asylums. He observed in 1884 that there were large numbers of patients in every asylum who did not require asylum care and discipline, but they received better care in an asylum than they could

[1] The author gratefully acknowledges the assistance of Karl L. Brooks in the preparation of this article.

"under any other circumstances now available." He lamented the fact that there was not more flexibility in the lunacy laws of the state:

> . . . . The managers of asylums ought to have larger discretionary powers in the management of asylums. They should be able, under recommendation of the superintendent of their respective institutions, to give greater freedom to patients, and greater scope to curative measures. It would be to the permanent advantage of asylums if managers were empowered to allow patients to go to their homes or friends on trial, to board for a time at health resorts or other places better adapted to their health than the asylum or to engage in industrial pursuits for remuneration. In various ways could the managers, in the exercise of their judgment, governed by the advice and experience of the medical officers, improve the condition of the insane in their charge, if they were given suitable powers(6).

Probably taking a page from recent experiences in Massachusetts (though he made no mention of that fact) the commissioner in his annual report to the legislature for the year 1885 strongly advocated the organization of a system of family care in New York State founded on Scottish methods, stating that

> Of the methods of providing for the insane in public care that of boarding out the quiet and harmless class in private families has assumed such importance in Scotland that I deem it my duty, in discussing the subject of the future provision for the insane in this state, to call the attention of the legislature to the system, and the success which has attended its operation.

The scheme was growing in popularity in Scotland, owing largely to efforts on the part of the Lunacy Board to make it "better understood, better organized and better supervised." Among its advantages were the facts that

> . . . . Money has been saved, the patients have been sufficiently well cared for, and in many cases made happier, and asylums have been relieved from over-crowding, prevented from growing unmanageable in size, and have been left more to their proper work of treating the curable and recent cases.

These facts, together with the observation that the abuse of patients in families seemed to be exceedingly slight and unimportant, led Stephen Smith to suggest the "feasibility of organizing and carrying out a system of boarding out the insane in this State." The allegation that American communities differed radically from those in Scotland could hardly be supported in the eyes of the commissioner since a system of family care had recently been set up in Massachusetts and many families had been found willing and anxious to undertake the care of insane boarders. The commissioner then outlined a plan for organizing a system of family care in New York State:

> The success of this scheme will depend primarily upon the organization provided to administer its details. Three conditions are essential, viz.: 1. The selection of cases suitable to be placed in families; 2. The selection of families adapted to the care of the insane; 3. Adequate supervision of those in families. Evidently the organization should be a central body, having intimate relations with the institutions for the insane, and large experience in the public charities of the state. . . . . The state commissioner in lunacy should, at least in the early history of the system, personally examine all insane in families a sufficient number of times annually to be satisfied as to their condition and management, and should have power, with proper restrictions, to make the necessary arrangements for the boarding of each patient, and of removal again to (the) asylum, when, in his judgment, the interests of the individual patient required such transfer. Additional inspections or visitations could be organized which would be inexpensive and trustworthy.
>
> In presenting this system of enlarging the accommodations of the insane to the legislature, it is proper to add that in Scotland, about one-sixth of its entire insane population, in public charge, is now in family care. If in this state the system was as fully developed and as successful, not far from 2,000 persons, now in asylums, would be enjoying the benefits of domestic life, and to that extent would these institutions be relieved of their over-crowding . . . .(7).

While the commissioner was setting up an impossible task for himself—that of supervising each case selected for family care—there can be no doubt that he had a clear conception of the possibilities of family care. It is unfortunate, perhaps, that family care was not then adopted by the state as one method of caring for the mentally ill. Stephen Smith, notwithstanding his advanced ideas, was unable to secure the adoption of his recommendations. His efforts along this line may have been dampened by the publication in January 1886 of a paper by Dr. Charles W. Pilgrim then on the staff of the Utica Asylum. This paper described the author's visit to the family-care colony at Gheel, Belgium. That he was not favorably impressed is indicated by the following quotation from his paper:

> . . . . To make use of the sentimental argument that such patients are happier under surroundings

which most nearly approach home life is puerile, for, as has been said, they are not in a condition to appreciate their environment. And to claim that they are as well cared for in houses without any of the modern conveniences, by those whose intelligence, in some cases, seems but little above their own, as they would be in a well-managed, well-constructed hospital under the immediate care of watchful physicians and skilled attendants, I cannot believe to be the case from the evidence which my visit gave . . . .(8).

Experiences in Massachusetts during the period 1885-1889 made it possible for Dr. Henry R. Stedman of Boston to write a paper evaluating the boarding-out system as set up in that state. While Stedman was quite certain that the Gheel system could "serve no useful purpose in the United States," he endeavored to show that it was "possible to avoid the defects of the Belgian methods, without losing its advantages in the way of domestic care to which, as all observers are agreed, many chronic cases are adapted." In the first place, family care of the insane was anything but a novelty, since many mentally ill had for years been cared for by their own families in all parts of the country, "some comfortably, many improperly, not a few shamefully." The new factor seemed to be that "these patients could be under the inspection and control of competent central authority." The objects of the boarding-out system were well known; they were

> . . . . to give to a selected number of mild, harmless, chronic patients in asylums, who no longer need the confinement, and necessary artificial care and surroundings of institutional life, a more natural and domestic life by boarding them out in families under state supervision, and at the same time to relieve the hospitals from overcrowding, allowing more room for the proper treatment of cases more susceptible to cure or improvement.

As a rule Stedman found that the patients boarded out in private families were "comfortable, contented, and in good bodily condition." To be sure accidents sometimes occurred; there had been one suicide, some had run away and others had had to be returned to the hospital. These accidents also occurred, however, when patients very much improved were discharged on a trial visit to their own families. One of the most serious objections raised against the boarding-out system was

> . . . . the liability to improper treatment to which the insane are thus exposed in the way of neglect, the imposition of drudgery and perhaps actual abuse, through the supposed impossibility of procuring any but inferior guardians for the small allowances they receive.

This objection was not found valid in practice either at home or abroad. While the plan had not yet materially relieved the Massachusetts state hospital from overcrowding there was no denying the fact that it had been more economical than continued support in hospitals(9).

This paper was read at the 43d annual meeting of the Association of Medical Superintendents at Newport, R. I. in 1889, and was the subject of much discussion. Dr. Henry M. Hurd was certain that the plan could not successfully be introduced in the State of Michigan. Dr. Eugene H. Howard of New York felt that all the advantages and few of the disadvantages of the boarding-out system could be secured by adoption of the cottage system. Dr. A. R. Moulton, inspector of institutions for Massachusetts—a guest at the meeting—stated that he had originally been prejudiced against the scheme, but his recent experiences as inspector had changed his opinions. He pointed out a number of advantages derived from the system, outlined his method of supervision, and closed his remarks as follows:

> Now I am very anxious that more patients shall be placed out to board, to relieve the crowded condition of Massachusetts hospitals, if for no other reason. Heretofore many have been consigned to the town alms-house. The hospitals, as I have represented here, are over-crowded, and the superintendents are crying out for relief. The overseers of the poor are removing patients to their alms-houses, and without going into details I will simply say that I believe every such removal is a step downward, and that patients boarded in even our most undesirable families are much better off than if placed in our best alms-houses(10).

The experience of Massachusetts was at least securing attention and awakening interest, though Dr. Herman Ostrander, in a paper read before the 7th meeting of the Association of Assistant Physicians of Hospitals for the Insane, ten years later (1899) declared that the Massachusetts experiment had "not yet found general favor in this country"(11). An article by Dr. Owen Copp, executive officer of the Massachusetts State Board of Insanity went a long way, however, in dispelling whatever uncertainty may have been entertained as to the practical

results of the system. Though there had been wanting in Massachusetts "that continuity of policy and sustained support which would have been favorable to the best development of the system and an adequate test of its merits," Dr. Copp was able to show positive results with relation to the institutions, the families, the patients and the public treasury(12).

Some impetus was given the movement by the International Congress of Alienists, held at Antwerp in 1902. Most of the papers and discussions dealt with the care of the chronic quiet classes of insane in private families. At that Congress the following resolution was unanimously passed: "Resolved: That family care should be applied in all its forms to the fullest extent." In addition over 50 members of the Congress signed the following resolutions:

1. For a not inconsiderable portion of the insane population requiring supervision, family colonization represents the most natural, most free, best and cheapest kind of care, and constitutes at the same time for a great number of patients an important means of cure.
2. Family care may be conjoined with any modern institution for the insane, especially where the nurses enjoy the privileges of separate houses and homes, which in itself is necessary for the securing of good nurses.
3. But at most of the large asylums family care can have only very limited application. A general adoption of this system of care can only be expected by the foundation in suitable rural districts of central establishments reproducing the ordinary asylums on a very small scale to serve as points of origin for family colonization.
4. The scheme of colonization does not do away with existing hospitals for the insane, nor is it suitable for every class of insane, but it can arrest in a practical, active and inexpensive manner the incessant and increasing demand for new asylums.

As a result of this publicity the New York State Commission in Lunacy drew up an act "to amend the Insanity Law, relating to the care and maintenance of the indigent insane outside of state hospitals." This act provided for setting up a system of family care in New York State and outlined a method to provide adequate supervision. The bill was introduced in the legislature but it met with considerable opposition and was not urged to passage(13).

At a conference between the Commission and state hospital superintendents in November 1907 Dr. William L. Russell, medical inspector, presented a detailed report of his careful study of Massachusetts methods of family care. The advantages claimed for the system were as follows:

(1) That the patients are happier in the midst of home comforts and pleasures than in the hospitals; (2) that assaults, sexual accidents, suicides, and even a certain degree of neglect, overwork, and ill-treatment are not unknown in institutions, and that careful selection and supervision will go far to prevent them in families; (3) that where the system is in operation there is a waiting list of applicants for patients, and that many apply over and over again for years, thus showing that the influence of the insane on the families is not found to be injurious; (4) that when working patients are removed from the hospitals, others are soon trained to replace them and are thus benefited; (5) that some who had ceased to improve in the hospitals recover when taken into families; and that others who did not recover, eventually became self-supporting or are taken care of by their friends without expense to the state; (6) that the maintenance of the insane boarded in families is somewhat less than in the institutions, and the cost of construction is saved; (7) that the system "creates tolerance of the insane by the public, facilitates their discharge from institutions, aids them in regaining and holding a foothold in the community, and may be a potent factor in diminishing the accumulation rate."

Dr. Russell also found a number of serious objections to the system.

As a result of this survey and of the ensuing discussion, the consensus of opinion seemed to be opposed to any attempt at setting up a system of family care in New York State, a view with which the commissioners coincided. They felt that the relief from overcrowding would be inconsequential particularly because in the south and eastern parts of the state—where overcrowding was most serious—there were few families with homes even passably comfortable who did not receive "from summer guests from the great cities a far greater return for energies expended in supervision than the state could possibly afford"(14).

So far as New York State was concerned —and indeed, the whole of the United States with the exception of Massachusetts—the issue of family care was shelved. More than a quarter of a century elapsed before it was again considered in New York with any degree of seriousness.

At the International Congress on Mental Hygiene, held in Washington in 1930, Dr.

Frederick Sano, medical director of the family care colony at Gheel, presented a paper setting forth the advantages of family care as it had been developed in the colony. The subject was also discussed by Dr. Rudolf Fabinyi, of Hungary, who pointed out the extensive and successful use of family care in that country. Although no immediate action followed the discussion at the Congress, it seemed certain that psychiatrists in this country were led to view family care in a more favorable light.

Establishment of Family Care in New York State

Dr. Charles L. Vaux, superintendent of Newark State School, proceeding with the sanction of Commissioner Frederick W. Parsons and under the guidance of Assistant Commissioner Sanger Brown, II, introduced in 1931 in New York State a family care system for mental defectives. Dr. Vaux described his first placements as follows:

> . . . . For some time, we have had in mind the establishment of a boarding home in the Village of Newark where cases might be sent directly without being admitted to the institution proper. On August 11, 1931, the first child was sent out and on September 25, 1931, an approved boarding home was obtained with one of our former matrons. In all four selected cases were sent to her. They were admitted to the local public school and placed in the ungraded or opportunity class. We are watching this experiment with a great deal of interest, as we believe it has many advantages. The child does not become institutionalized, avoids the stigma of being an inmate of an institution, and mingles with normal girls of her own age, besides being surrounded by a home-like atmosphere. The cost does not much exceed the per capita cost at the school (15).

Meanwhile, at the request of Dr. Sanger Brown, II, assistant commissioner of the Department of Mental Hygiene, Dr. Horatio M. Pollock made a special study of family care of mental patients and presented a paper on the subject to the Quarterly Conference held in New York City December 10, 1932 at the Psychiatric Instiute and Hospital. The problem of providing accommodations for the increasing number of mentally-ill patients was yearly becoming more acute and the question was raised as to what could be done. The hopes of preventive medicine had not been fulfilled, wrote Dr. Pollock, and could not be expected to do much more in helping to solve the problem during the present generation; research in this field was comparatively new and the principles thus far developed had not been very extensively applied. While curative treatment presented another avenue of escape from the institution burden, present recovery rates did not "afford a basis for untempered optimism." There was, however, a way of reducing hospital population which hitherto had largely been neglected in this country:

> At present we allow a large number of unrecovered patients to go into the community on parole or trial visit. If these patients adjust properly to community life, they are eventually discharged. If they do not adjust they are returned to the hospital. The family care of patients . . . . is merely an expansion and extension of such parole system. The principal distinction between family care and parole as now practiced lies in the matter of support. Paroled patients are usually placed with relatives or friends who agree to become responsible for the patient's maintenance: under the family care system the state or other public authority pays wholly or in part for the care of patients in private homes, usually homes of persons who are strangers to the patients.

Presenting the system in this light undoubtedly did much to overcome whatever opposition or prejudice there may have been against this novel idea, novel at least so far as putting it into practice in New York State was concerned.

The systems of family care as they were conducted at Gheel, in Scotland, Switzerland, Germany and Massachusetts were outlined, and the question as to whether it would be wise to extend the parole system in New York State by placing patients in families was one which, according to Dr. Pollock, deserved full consideration. He concluded as follows:

> . . . . If the following questions can be answered in the affirmative it would appear that a system of family care should be undertaken in this state:
>
> 1. Would patients be as well cared for in family homes as in institutions?
>
> 2. Could family care be made satisfactory from a psychiatric viewpoint?
>
> 3. Could mental patients be placed in homes so that no harm would come to the home in which they are received or to the community in which they are placed?
>
> 4. Would the cost of family care to the state or to patients who can afford to pay be less than that of institution care?

5. Would a considerable number of suitable homes in several parts of the state be available for mental patients?

6. Could a community system of care such as prevails at Gheel be developed in villages in this country?

While it seems probable that an affirmative answer could be made to all of these questions, the matter would be positively determined only by trial demonstration. It is thought that within easy reach of the present state hospitals there are several villages that would constitute favorable centers for family care. There should also be available many former state hospital employees. who now maintain homes of their own that would be willing to care for patients therein.

Having in mind the great institutional problem before us and the experience of other countries, I believe that family care of mental patients deserves the serious consideration of the authorities of this state and that a trial demonstration under as favorable circumstances as possible should be made(16).

This paper was enthusiastically received and discussed at length by members of the conference. While Dr. Earle V. Gray, superintendent of Gowanda State Hospital, was not sure that New York State was prepared to launch a system of family care, he believed that "it would be of tremendous value to the state as a whole," and suggested that a beginning might be made at some of the institutions. At this point Dr. Vaux presented in some detail an outline of the experiment being carried on at his institution:

At the Newark State School we have been conducting an experiment along the lines of Dr. Pollock's paper, and in placing the patients from our institution outside we have the same difficulty to meet as with insane patients, that is, in getting the patient who has been in an institution a long time to take up life outside.

This is helped by our colony methods, the colony house serving as a halfway house leading to parole and carrying over something of institutional care during the time that adjustment to community life is being made.

While the institutionalization of an adult patient may get her out of step with her former mode of living, it has a greater effect upon a child because, when she spends the formative years in an institution, she has missed those contacts and experiences that develop her ability for life in the community. . . . .

To meet this, we recently went a step further than the colony house and started a boarding home for four girls. With this boarding home, we aimed at complete separation from the institution, and to establish as nearly as possible a normal family situation. We obtained a foster-father and mother, who had already raised a family of their own which has grown up and left home, leaving a void in their parental affection and no outlet for their capacity to care for children. Their comfortable home is situated in a nice section of the village, about one mile from the village school which the girls attend. The foster parents were instructed to treat these children as their own, and to supervise them no more or no less than they would their own. These girls help with the housework, run errands, play in the yard and do their homework. They go unattended to school, church, Sunday school, choir rehearsals, Girl Scout meetings and motion picture shows.

The success of the experiment was shown in part by the fact that the girls not only made good marks in the special class but two of them had done so well that one was promoted to the regular fourth grade and another was about to enter the third grade.

On motion Commissioner Parsons appointed a committee on home and community care of institution patients. Dr. Robert Woodman, superintendent of Middletown State Hospital, was made chairman of the committee with Miss Crutcher and Drs. Vaux and Pollock as his co-workers(17).

The committee on family care reported to the Quarterly Conference held at Marcy State Hospital on September 12, 1933. Two members of the committee had visited patients boarded out in Massachusetts and additional information concerning family care practices in Europe was reported. A start in the family care of patients had been made at the Newark State School when four patients were placed in private homes during January 1933. Money for the financial support of this venture was diverted from the "colony funds" of the institution. By September 32 patients (all women of adult age) had been placed in 14 homes in the village of Walworth, New York. These patients were maintained at $4 per week and not more than three inmates were placed in any one home. Walworth is a pleasant rural community of 300 inhabitants located in the country some distance from the railroad and main highways. Here, situated within 17 miles of the Newark State School, the patients could walk the roads unendangered by traffic. This community had the further advantage of being accessible at all times in case of emergency and was near enough for frequent visits of supervision.

The committee report continued:

. . . . We recommend that a sum be placed in the budget of the Department of Mental Hygiene suffi-

cient to experiment with this method both by the dispersion of patients and by the method of developing centralized communities. The money could be allotted to state hospitals and state schools prepared to give the method a trial. Twenty-five thousand dollars would board nearly 100 patients for a year at $5.00 a week. The size of the appropriation may well depend on the interest manifested. We believe that as an extension of the parole system no further legislation is necessary(18).

Early in 1934 the authorities at the Newark State School decided to establish a community center in the village of Walworth. Many of the patients went unattended, some for considerable distances, on errands to the village; it was thought that they should have some place to rest other than the post-office steps. Accordingly arrangements were made with one of the guardians whose residence was centrally located to operate a community center in her home. In addition to serving as a social center it was arranged that it should become a center for social service, nursing care, and a depot for clothing, supplies and occupational therapy materials. The boarding mother was made an employee of the school:

. . . . She furnishes the room, also acts in the capacity of nurse, looking after the feet, hair and weight, etc., of all cases in the community. Here they are provided with books, magazines, pictures, games and a radio, Our occupational therapy director visits this room occasionally, and provides suitable forms of occupation which fill a long-felt want, as many patients have complained of so much idle time, something which never seemed to interest them while in the school(19).

At the 90th annual meeting of The American Psychiatric Association in 1934, Drs. Charles E. Thompson and Horatio M. Pollock presented papers on family care of the insane. The former reviewed recent developments in Massachusetts and his own work at the Gardner Colony and concluded with the following paragraphs:

I believe that family care should be a part of every hospital system because: It provides homes for those who for sufficient reason cannot be returned to their former homes. It offers a beneficial change in environment to many patients. It is the natural step between hospital and parole. In some cases it may assist in quicker social readjustment, offering as it does a chance of individual adjustment. It should make prolonged hospitalization in many cases unnecessary. It is not only applicable to the deteriorated or those of advanced years, but also to other types, especially the convalescing. Every patient in family care makes a bed in a hospital unnecessary.

Success or failure of the family care system depends upon the active, continuous, intelligent interest of those who develop and supervise it(20).

Dr. Pollock's paper was chiefly concerned with practical considerations for setting up systems of family care and with the advantages to be derived therefrom:

In introducing a system of family care consideration must be given to the welfare of patients, the expense involved, the means to be taken to secure adequate supervision, the conditions to be met to obtain public approval and the general welfare of the community in which the patients are placed. . . . .

This outline was followed by a number of concrete suggestions looking toward the establishment of special colonies in a state system of family care. In conclusion he wrote:

The advantages to be derived from family care would be four-fold: The patients placed in suitable families would resume a measure of community life with a natural environment and with more freedom than could be possible in a state hospital. The families receiving patients would have an outlet for their altruistic sentiments and would acquire a secure economic status. The state hospital relieved of many of its custodial cases could devote more of its energies to the scientific treatment of acute and recoverable patients. The state conducting an extensive system of family care would be relieved of the necessity of building new hospitals and would have a better opportunity to treat its mental patients in accordance with their individual needs(21).

In the discussion of these papers it developed that the State of Pennsylvania had given serious thought to this subject—the sole handicap being lack of legislative authority to board out patients(22).

Family care received new impetus in New York State in 1935 when it was enacted by the Legislature (*Laws of 1935*, Chapter 27) that

There may be allocated from the money appropriated for maintenance and operation of any institution in the Department of Mental Hygiene a sum not to exceed $20,000 for the purpose of establishing a system of community care for legally admitted patients and inmates at rates not exceeding $4 per week.[2]

[2] In 1940 the Legislature increased the maximum rate to $6 per week and in 1942 further amended the law by removing the limit on the rate to be paid. In that year the Department authorized the payment up to $7 per week plus 25 cents per week per

This money was made available July 1, 1935; New York State thus officially introduced a system of family care for patients in the state hospitals. During the year that followed 11 state hospitals and 4 state schools placed patients with private families under the provisions of the above appropriations. By June 30, 1936 the state hospitals had placed 268 patients and the state schools, 137 patients. The largest total of such patients, 86, was under the supervision of the Middletown State Hospital while Harlem Valley and St. Lawrence State Hospitals reported 55 and 32 patients, respectively. As the undertaking had thus far proved very satisfactory, it was planned to extend placements during the next fiscal year so far as available funds permitted. To aid in this venture, Dr. Pollock edited, and wrote in part, a book on *Family Care of Mental Patients* during the fiscal year 1936; it was published in December by the State Hospital Press. This was the first book on the subject in the English language. It described family care in several countries in Europe, told the story of Massachusetts' experience along this line, outlined New York's experiments in family care and gave some practical considerations for introducing and developing the plan (23).

Chapter 125 of the *Laws of 1937* increased the amount of money available to each institution (except Newark State School) for family care from $20,000 to $30,000. It was therefore expected that the number of patients placed in family care for the fiscal year 1938 would be larger than that for the previous year. Newark State School, which had the largest number of patients in family care (129 patients), was allotted $40,000 to spend for this purpose during the ensuing year.

Further study of family care was made possible by joint action of the New York State Department of Mental Hygiene and the National Committee for Mental Hygiene. Dr. Pollock and Miss Crutcher were appointed to make a study of family care in Germany and other European countries during July, August and September, 1937. The expense of the study was paid from a grant made by the Oberlaender Trust of Philadelphia.

During the fiscal year ended June 30, 1938, a number of hospitals materially increased the number of patients placed in family care and the results were most encouraging in promoting the social development and rehabilitation of the patients.

During 1939 family care lost ground owing chiefly to lack of appropriated funds to pay the board of patients. However, increasing interest was evident by the number of applications for patients; the various communities had found it a satisfying and profitable experience. Relatives of patients had also expressed their satisfaction with the experiment by making every effort to keep patients in family care (24).

At the 1939 annual meeting of the American Association on Mental Deficiency in Chicago, Pollock read a paper on the future of family care in America. He pointed out that

> In making provision for the future care of the mentally ill and the mentally defective we can adopt one of the several lines of action:
>
> 1. We can continue the policy now in vogue in most states of providing elaborate institutions for a portion of the mental patients while neglecting the others.
>
> 2. We can adopt the policy of certain other states and provide simple, custodial care for the lowest-grade patients and neglect the others.
>
> 3. We can use the plan in operation in a few other states and supplement institution care with colony care and family care, and thus provide for the larger part of the patients that need state assistance.

He further stated that since the demands made upon the institutions were so great, and since family care costs only about half as much as institutional care, it was probable that in the not distant future the general use of family care would supplement institution care in every state of the Union. The main features of such a system would include:

> 1. A small central hospital which would receive patients deemed suitable for family care direct from the community or from a state hospital or state school. Such patients would be observed for a few days and then placed out in suitable families.
>
> 2. A group of families easily accessible to the central hospital who would receive and care for the patients assigned them. Such caretakers should receive training for their task. . . . .
>
> 3. A well-organized plan of operation. No system of family care will run itself. For smooth working

patient for spending money. In April 1943 the allowable rate was again increased, this time to $8 per week.

there is required a staff of experts who will perform their respective functions with promptness and efficiency. Skill is required for the examination of patients, for the selection of families, for the allocation of patients, for the instruction of caretakers and for the supervision and treatment of patients in their foster family homes. The best possible treatment of each individual patient is the end to be attained.

In this way one-fourth of the mentally ill and one-third of the mentally defective patients could readily be placed in family care(25).

As a result of more adequate legislative appropriations for the purpose, the number of mentally-ill patients in family care in New York State rose from 209 at the close of the fiscal year 1940 to 1,017 patients in 1941. The experience thus far gained indicated not only that family care was entirely practicable but that general satisfaction with the system was expressed by the patients, by the families receiving them and by the hospitals using the system. Visitors had even come from other states and Canada to learn something of New York's program for family care. These inquiries came from both public and private organizations interested in what this type of care offered to patients. New York's experience showed that it saved money for the state and offered a maximum amount of freedom and satisfaction for patients(26).

An outstanding contribution to the literature on family care in 1944 was the publication of *Foster Home Care for Mental Patients* by Miss Hester B. Crutcher(27). In this book Miss Crutcher discusses the meaning and objectives of family care, its development at home and abroad, and the results of a family care program—financial as well as therapeutic. There are chapters on the selection of patients, selection of homes, supervision of the patient, methods of organizing family care, suggested forms and procedures, case histories, and an appendix dealing with family care programs in the United States. The advantages of family care are tersely summed up as follows:

> The experience in several states during the past ten years has shown that family care is an effective administration procedure—effective for the following reasons: (1) it releases space for other patients in need of specialized treatment and for those from whom the community needs protection; (2) it provides care for the patient at less cost than hospital maintenance; and (3) a large proportion of patients so placed make a relatively permanent and satisfactory adjustment.

Introduction of Family Care in Other States and Canada

In the thirties a sentiment in favor of family care developed in several states and in the Province of Ontario, Canada. In the main the annex system whereby patients were placed out directly by institutions was adopted. A brief statement of the action taken in the several states and in the province follows.

Following the example of Massachusetts, Dr. J. Allen Jackson, then superintendent of the Danville (Pa.) State Hospital, instituted in 1932 a system of boarding out patients in cooperation with poor authorities. In a personal communication to the author, October 21, 1935, Dr. Jackson stated:

> For this purpose three types of homes were sought:
>
> 1. Wage homes in which the maintenance of the patient would be provided for entirely by his own labor.
>
> 2. Part wage homes in which the work of the patient could be accepted as part payment for maintenance.
>
> 3. Boarding homes in which maintenance would be provided by relatives, friends, overseers of the poor or county commissioners.
>
> In the selection of boarding or wage homes, great care is exercised to determine the community environment, the physical qualities of the home and the qualifications of the applicants for rendering the type of supervision necessary for patients placed with them. . . . . A social service investigator personally investigates the home and checks carefully on all references given, after which the home is either approved or disapproved by the superintendent of the hospital.
>
> The funds necessary to maintain an indigent patient in a strictly boarding home are $18 a month, which sum is divided into $14 for food and shelter and $4 for clothing and incidentals. This amount is provided by either relatives, friends or, in most instances, by the overseers of poor and county commissioners of the district responsible for the maintenance of the patient in the hospital.

In 1935 the legislature of the State of Pennsylvania passed an amendment to the mental health law, providing for the boarding out of mental patients. The act authorized

> the superintendent and board of trustees of any state mental hospital to contract or otherwise arrange for the boarding out of committed mental patients who have not criminal, suicidal or homi-

cidal tendencies or who are not addicted to the use of alcohol or narcotics and who, in the opinion of such superintendent, and board of trustees may be otherwise suitable.

Such arrangements had to be approved by the Department of Welfare before being put into effect. Unfortunately the legislature of Pennsylvania thus far has not made the appropriations necessary to permit the general use of family care by the state hospitals.

In the State of Utah a legislative act providing for the family care of mental patients became effective March 14, 1935. Section 2 of the act reads as follows:

Patients Placed at Board.—The board of trustees of the hospital upon the recommendation of the superintendent may place at board in a suitable family in this state any indigent patient in the hospital who has been regularly committed and is quiet and not dangerous. Any such patient so placed at board by the trustees thereof shall be deemed to be an inmate of the hospital. The cost to the hospital for placing such patient at board shall not exceed $4 per week for each patient. The bill for the support of the persons who are placed at board in the families by the board of trustees shall be paid monthly by the hospital and shall be made out by the steward, examined by the board of trustees at their regular meeting and if approved, submitted to the state auditor as are other obligations of the hospital.

The placing at board of such patients shall in no way affect the rights of the hospital to supervision and readmission of the patients. All patients so placed at board shall be at the expense of the hospital and shall be visited by the superintendent or his duly appointed assistant at least every three months. Frequent reports may be required from those into whose care patients are placed by the superintendent.

Owing to the fact that the state institutions in Utah have ample capacity, the putting into effect of the law has been delayed.

The State of Illinois, through its Department of Public Welfare, began the placement of patients in families in 1941. Patients are placed out by the managing officers of the state hospitals and state schools. The funds for the payment of caretakers are obtained from the general maintenance appropriation of the institutions supplemented by contributions from either government or private sources. In some cases the family care patients pay in part or whole for their maintenance by working for their caretakers. Thus far the system in Illinois has not assumed large proportions.

The Board of Mental Hygiene of the State of Maryland in 1941 made an arrangement with the State Comptroller whereby certain funds could be used to cover the family care of mental patients. Patients are placed out by each of the state hospitals. In some cases the funds provided by the state are augmented by old age assistance or other relief aid. Patients who are financially able are required to pay in full for their maintenance in families.

The state hospitals in California in 1939 placed in families a few patients who were able to pay for their maintenance. The state officially adopted a family care system in 1941 by appropriating $45,000 to each of the seven state hospitals for use in placing patients in families. In general the system adopted is similar to that used in Massachusetts and New York.

In the State of Michigan family care was adopted to supplement institution care in 1942. The system was instituted by Dr. Frank F. Tallman, then director of mental hygiene for the State Hospital Commission. The Commission receives appropriated funds to cover the costs of family care, including board of patients and salaries of supervising social workers. Patients are placed out directly by the state hospitals.

In Rhode Island as early as 1914 the State Hospital for Mental Diseases was authorized to place mental patients in families. The law, however, did not take effect until 1940. Previously no money was appropriated for the pay of caretakers. Since that time there has been a noteworthy development of the system.

The Province of Ontario, Canada, enacted legislation in 1933 to enable the provincial mental hospitals to board patients in private homes at the expense of the province. The express purpose of the act was to relieve congestion in the hospitals and reduce capital expenditures and also to provide a suitable environment for patients of the chronic class. The system adopted was patterned after that used in Scotland and Massachusetts. Each hospital was at liberty to place out patients or to refrain from so doing. By December 31, 1944, ten of the fourteen Ontario hospitals had 523 patients placed in approved

homes. These constituted about 4 per cent of the patients on the books of these hospitals.

From the foregoing review of the use of family care of mental patients in America it will be seen that this system of care is gradually becoming more widely adopted. Its development up to the present time would undoubtedly have been much greater had it not been interrupted by the World War which began in 1939. Following the successful termination of the war we may confidently expect the adoption of family care by all of the states of the United States and all the provinces of Canada.

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A TOTAL PSYCHOTHERAPEUTIC PUSH METHOD AS PRACTICED IN THE FIFTH SERVICE COMMAND REHABILITATION CENTER, FORT KNOX, KENTUCKY

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This is a presentation of the psychotherapeutic method used in treating military delinquents at the Ft. Knox Rehabilitation Center[1] as a result of the development, growth and experience of 2½ years of operation. These centers were deemed necessary because of the increasing number of military offenders and the growing seriousness of the manpower shortage. This increase of military offenders was to be expected because of the transition from a professional to a civilian army and the enormous expansion of the army. Each rehabilitee is a general prisoner, sentenced by a court-martial to at least 6 months confinement and a dishonorable discharge, which is suspended, after conviction of a serious military offense. At the time the sentence is passed the court makes a recommendation as to whether the soldier has any possibility of being rehabilitated and restored to duty. If this is the opinion he is committed to a rehabilitation center.

The initial psychotherapy is administered the day the rehabilitee arrives at the center and continues until he leaves. On the day he arrives a check of his clothing is made and any additional necessary clothing is issued, including a class A uniform and toilet articles. He now loses the title of prisoner, with its accompanying stigma, and is thereafter referred to as a rehabilitee. This in itself is of psychological benefit as it lessens a feeling of rejection developed during his court-martial and confinement in the guardhouse.

Each rehabilitee is interviewed by the Commandant, who informs him of his new status, briefly discusses the rules and regulations and assures him that regardless of the reason for being sent to the center he will be given full opportunity to return to duty and revert to his previous honorable status as a soldier of the U. S. Army. This personal contact with the Commandant is of tremendous benefit because it tends to give the rehabilitee full assurance and encouragement that he can be restored to duty, and dispels any doubts or erroneous ideas he may have received concerning his status prior to his arrival.

Another contact made early in his stay at the center is with the custodial officer (supervisor of prisoners) who, further and in more detail, orients the rehabilitee to the rules and regulations of the center, informs him of the general routine, limitations on sending and receiving mail, the handling of personal funds and possessions and a general outline of the merit system.[2] The custodial officer further advises the rehabilitee that he will assist him with any military or personal matters and on any specific problem he has while at the center. It is at this time that the custodial officer tries to adjust any initial problem the rehabilitee may have, to remove any potentially aggravating factor which might retard his adjustment.

The chaplain's office has an important function and each rehabilitee makes an early visit to the center chaplain who advises that he is always available to discuss and help with any personal or religious problems. He encourages the rehabilitee to take advantage of the weekly religious services and program. The chaplain, in many instances, is a most beneficial influence in assisting a man to rapidly develop a healthy attitude towards the entire center program. It has been found that some rehabilitees feel more free to discuss their personal problems with the chaplain, who makes every effort towards a solution. The chaplain is also an important factor in arranging some of the recreational program.

[1] Rehabilitation Centers were established in each of the 9 Service Commands in the United States by WD Circ. 368 on 9 Nov. 1942.

[2] This system was recently instituted and will be explained later in this article.

A full time medical officer is assigned to the center and each rehabilitee, soon after admission, is given a complete physical examination. Arrangements are made for dental care, correction of visual defects and a complete investigation and correction, if possible, of any other physical defect or complaint. This is extremely necessary as a fair percentage of the men have been outside of military control for varying periods of time. The medical officer makes every effort to assume the role of family physician and counsellor. It is found that in many cases a minor or major physical defect was a factor in the maladjustment which eventually led to the rehabilitee's present confinement.

The Red Cross worker also makes contact with each rehabilitee to assist with his personal, family and financial problems, utilizing the Red Cross home chapters and their contacts with all the public, private, social and relief agencies. Early arrangements can be made for financial assistance for the rehabilitee's dependents during his stay at the center. This relieves much of the worry over the welfare and financial status of his family. The Red Cross worker also acts as a liaison officer in obtaining the sociological case history of each rehabilitee by requesting this service from the local chapters.

The department of psychiatry and sociology is a focal point during the rehabilitee's entire period of confinement. Within a few days after his admission a preliminary, detailed interview and psychiatric examination is conducted. All indicated special psychological tests are administered. Initial screening is done so that early intensive examination and therapy can be performed. The necessary factual information is obtained to insure a complete sociological history and a preliminary personality evaluation is made. It is at this point that the man receives his first of a series of individual psychotherapeutic treatments and he is orientated to group psychotherapy. The individual psychotherapy is variable in amount due to the large number of rehabilitees and limited amount of trained psychiatric personnel. The ideal, but impossible standard would be prolonged intensive individual therapy in all cases, correlated with the group psychotherapy. A minimum of three sessions, totalling approximately 4 hours, is given to each rehabilitee. In many instances where the prognosis appears to be good, additional individual therapy is given. Additional therapy is also given to selected cases because of their aggressiveness or marked antisocial behavior which produces institutional problems. The purpose of the treatments is to "soften" and socialize the men to more acceptable behavior patterns. Through examination and indicated tests recommendations are made for proper placement in the vocational program.

All of the above contacts are made within several days to provide as complete an orientation and evaluation of each individual rehabilitee as is possible. Experience has highlighted the value of the rehabilitee's early and complete understanding of the center's purpose and functions. This tends to desensitize him from the stigma attached to being a general prisoner. The multiplicity of early contacts is intended to encourage and reassure the individual, minimizing any feelings of rejection and at the same time bolstering his ego to the point where he is desirous and confident of being restored to duty. It is repeatedly emphasized that this is a place where he must learn to understand the personality deficiencies which led to his coming here, and to change to more acceptable behavior patterns.

The general program for the first 3 months at the center is arranged to provide a healthy, equal distribution of group and individual psychotherapy. One half of the day is utilized in a varied work program, which with the military training, provides the necessary physical activity. The work program consists of logging, clearing of brush and the operation of a sawmill, which provides much of the lumber used on the military reservation. Road building, the beautification of the grounds are carried on the year round. A small nursery is maintained within the center and numerous work details are furnished throughout the post to assist other organizations in the maintenance and completion of their functions. As a result of the beautification program the area around the rehabilitation center is one of the most attractive on the reservation and provides a healthy psychological environment. The men

are under constant supervision of overseers who function as guards and foremen. These men as well as all personnel of the center received continuous weekly training which corresponds to the in-service training program of a progressive custodial institution.

Part of the remaining half day is devoted to infantry military training and it is possible to give a thorough basic course. Considerable emphasis is placed on drill and calisthenics, for promotion of physical stamina, the development of group action and good military discipline. It has been proved that these activities are extremely valuable in promoting group action (teamwork) and the automatic, unquestioning acceptance of authority, which is essential in the training of any good soldier.

The educational program supplements the man's military training so that he may become a more efficient and satisfactory soldier. Consideration as to the special course he receives is based on his education, general intelligence, civilian and previous military occupation. Educational classes are conducted for all semi- and total illiterates, since in some cases this factor is closely related to a man's maladjustment in the army. Courses in mechanics, clerical work, signal communications and cooking and baking are provided for the men able to absorb this training. Demonstrations and actual practical experience are afforded as an integral part of the training in each military specialty. Rehabilitees with special skills are utilized as assistant instructors in the various classes.

Recreational activities such as movies, organized athletics, a library and travel talks are provided as a regular adjunct to the rehabilitation program. Movies are carefully selected for their inspirational, educational, social orientation and entertainment value. Men having particular hobbies, such as any form of handicrafts, are encouraged to continue these activities during the time allowed for recreation. An open air amphitheater built by the rehabilitees is used when the weather permits in presenting shows. Recently a small, mimeographed weekly newspaper, entirely written by the rehabilitees has been started under the sponsorship of the department of group psychotherapy.

The value of group psychotherapy was recognized early and a fully developed program has been in effect for a considerable time. A paper on the subject is to be published.[3] This program, briefly, consists of daily hourly sessions, in large or small groups, for 5 days a week. Visual aids to introduce the group sessions are of value in arousing interest and graphically presenting the problems to be discussed. The active participation of each rehabilitee in the discussion is fostered and special individual attention is given each man. When indicated, rehabilitees are referred to the department of psychiatry and sociology for further intensive individual psychotherapy or very small group therapy sessions. In conjunction with the group therapy program, the one hour on the sixth day is devoted to orientation. The importance of this is to foster a better understanding of current events; the purposes and aims of our country in the war effort and the peace. Interest in these subjects is kept at a high level by the maintenance of orientation bulletin boards in each barracks by the rehabilitees and a weekly prize is offered to the best barracks.

In approximately $2\frac{1}{2}$ months each rehabilitee is brought before a board of officers. They review his progress by evaluating the reports submitted from the various departments. These include a complete sociological history and psychiatric examination with recommendations by the neuro-psychiatrist, who heads the department of psychiatry and sociology, with tentative diagnosis and prognosis in terms of his ability to adjust as a satisfactory soldier. It is at this point that one of three recommendations is made. Men who have adjusted satisfactorily here and have shown adequate change in their attitudes and mental reactions are recommended for transfer to the honor company. Where some improvement has been shown but it is still insufficient to indicate adequate adjustment, the rehabilitee's deficiencies are discussed with him, encouragement is given and he is returned for further training, treatment and future consideration. Men who have not adjusted here or who have shown no changes in their basic personality defects and appear unamenable to treatment are recommended

[3] Abrahams and McCorkle. Group Psychotherapy in a Rehabilitation Center.

for transfer to a disciplinary barracks for further confinement and possible future consideration there.

The following table shows the average distribution by percentage of the various general types of cases received at the center during one month.

PSYCHIATRIC DIAGNOSIS OF REHABILITEES

	Per cent
Essentially normal	2
Psychopathic personality	43
Chronic alcoholic	5
Psychoneurotic	2
Mental defective	5
Borderline mental defective	2
No diagnosis	27
Mild to moderate psychopathic traits	10
Schizoid personality	2
Others	2
Total	100

Recently a merit system has been instituted in order to offer material rewards for good conduct and is of psychotherapeutic value. Each man upon arriving at the center is given an initial number of points which, if he retains them, give him extra privileges not normally accorded. Deductions of a variable number of points are made for infractions of the rules and regulations which may only be regained by outstandingly good conduct. This is a somewhat juvenile approach from a psychotherapeutic standpoint but it has worked successfully in many civilian penal institutions, and at the center the response from the rehabilitees has been exceptionally favorable, to the point of enthusiasm.

The honor company consists of men who have successfully demonstrated the required changes of attitudes and behavior patterns in their initial 3 months at the center. This status can be compared to institutional parole. These men are required to complete a basic infantry training program and in addition continue to receive group and individual psychotherapy. Honor company men are in a separate area of the center and all activities are carried on without guards. They are given practically all the privileges allowed the regular duty soldier, with the exception that they are not permitted to leave the area of the center without special permission. However, special permission is given on Sunday afternoons and evenings for taking part in any activities on the post. This permits them to associate on an equal basis with other soldiers on a duty status. Psychotherapeutically this provides an opportunity to gradually resocialize and to further remove any remaining stigma attached to being a general prisoner. In the event of any minor maladjustments, these can be corrected while still at the center, and in addition the special privileges provide a more practical and satisfactory criterion as to their ability to adjust when restored to duty.

At the completion of his training program, the rehabilitee is again brought before a board of officers for final review and recommendation. The neuro-psychiatrist's report of the man's progress in developing insight into his difficulties and forming more acceptable patterns of behavior, to both normal and adverse conditions, plays an important part in the final evaluation by the board. The board takes this opportunity of commending the man for his success and expressing their confidence in his ability to become a good soldier; they assure him that he will be recommended for restoration. The effect on his morale is further augmented by a final personal contact with the Commandant.

SUMMARY

This article attempts to show an adaptation with modifications, of a total psychotherapeutic push method, as used in a rehabilitation center. The complete value of this method cannot be accurately measured. The results obtained, in terms of successful restorations are encouraging. They are based on three follow-up reports of men restored to duty, covering a nine months period, providing they are on duty in the United States. Regulations prohibit obtaining follow-up reports on men restored to duty after they are sent overseas. It is fully realized that no control group has been studied. These successful restorations do not show the total value of the program, inasmuch as it is the belief of the writers that many men, not restored to duty, have improved to the extent of becoming more tractable as cus-

todial subjects. It is the opinion of the writers that this method of treating military offenders warrants further investigation and possible wider adoption by civilian correctional institutions, particularly by reformatories and industrial schools. The entire program, as outlined in this article, is an attempt to treat military delinquents with psychotherapy in a more intensified manner than is generally done. The over-all management and treatment of delinquents is still a debatable question. However, if psychotherapy is to be of any benefit, it is the writers' opinion that every available type of accepted treatment should be utilized, rather than specializing in any particular type or types of psychotherapy.

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EMOTIONAL ADJUSTMENT OF NEWLY BLINDED SOLDIERS

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Much has been written concerning the psychological adjustments enforced upon individuals who become blind, particularly from the standpoint of re-orientation and adaptation of sensory functions(1). Very few clinical reports have dealt with the more immediate emotional adjustment problems of blindness. Moreover, there has been little or no evaluation of blindness as a specific individual mental stress that must be met either by a constructive, emotionally stable attitude or by a maladjusted, neurotic attitude. This paper proposes to describe both the "normal" and the pathological emotional reactions towards blindness, based upon observations derived from the neuropsychiatric examination of 150 blinded soldiers. The psychological factors which determine the mode of response of the blinded person are also discussed.

As a matter of policy, all blinded soldiers are first sent to one of two general hospitals, designated as specialty centers for such cases. Following the completion of the required medical, surgical and prosthetic treatments, the soldier is sent to a convalescent hospital, and there given specialized training and vocational rehabilitation for the blind. It is only after the completion of these two phases of the army program, embracing all necessary medical and rehabilitation services, that the soldier is considered for discharge. As soon as the soldier arrives at the general hospital, a program of orientation, education and vocational training is begun and continued concurrently with his surgical treatment. By the time the soldier is transferred to the convalescent center, he is well advanced in his rehabilitation progress.

As part of the program at Dibble General Hospital, each blinded soldier is given a thorough psychiatric examination shortly after admission and again prior to his transfer to the convalescent facility. In addition, a detailed psychiatric study is made both of his civilian and military adjustment. These examinations are performed routinely, without regard to the presence or absence of indications for psychiatric investigation.

Of the 150 soldiers studied, 134 had been blinded in combat, and 16 were blinded as the result of disease or non-combat injury. One to 3 months had elapsed between the onset of the blindness and the inauguration of psychiatric investigation. Of the 150 soldiers observed, 81 had no vision in either eye; 43 had light or movement perception in one or both eyes; and 26 had vision varying from 20/1000 to 20/200 in their best eye.

Nearly all combat cases had associated facial or other injuries in addition to their blindness. These associated wounds ranged from varying degrees of destruction of the face and jaws; or amputations of one or more extremities; or multiple fractures; to those of a lesser degree, involving minor head and facial lacerations. Practically all had fractures of the facial bones in the ocular region with the possibility of hidden brain trauma. There was evidence of fairly severe brain damage in 11 cases. With the exception of a few amputations and orthopedic disabilities, the majority had blindness as their dominant problem.

THE "NORMAL" EMOTIONAL REACTION TO BLINDNESS

It has long been an accepted observation that blindness is, to all persons, one of the most feared disabilities. The sudden loss of vision in a young adult requires the most profound psychological and emotional re-orientation towards every aspect of life. It might be anticipated therefore, that severe

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emotional disturbances would arise in practically every blinded soldier. Actually, our clinical experience indicates that this does not always or necessarily occur.

The soldier of sound personality structure, free from pre-existing neurotic or psychopathic traits, who is blinded by injuries received in combat, is fully capable of making an adequate emotional adjustment to his disability, provided adequate orientation and rehabilitation facilities are available. Such soldiers, on learning their eyesight has been permanently destroyed, react in a courageous and constructive manner. They accept their disability with fortitude and with the philosophical attitude of "Well, it's happened, one has to make the best of it and go on in life from here." They are not depressed, and the insecurity that might arise out of such an overwhelming handicap is well controlled and constructively directed towards the maintenance of a social usefulness and psychological independence.

This excellent attitude arises very early after the injury is incurred and few problems arise in the rehabilitation of this group. Well-adjusted blind soldiers have expressed their attitude towards their disability in strikingly similar fashion. The following are direct quotations of their comments:

Well, I think it is better to be this way than the way some fellows are. Even though everything is strange and it is hard to get used to this kind of life, I'd rather be like this than to be over in France buried. You know I really don't need to see to imagine what everything is like.

Something that has happened and I can make the best of it. When you go into combat you expect something to happen.

Just taking it as something that can't be helped I don't figure I got it bad at all. There are other guys in terrible condition over there. I haven't lost much.

It makes you think a little, but I figure I'm lucky to be alive. They wiped out the rest of the men, a few got away. I was just one of the lucky ones. I've got to do my best now.

I don't know, it's hard to say. I hate it, but what can I do. I just have to take it.

Well, being blind is just like being in the infantry, there's nothing you can do about it, it just happened. I think I will get along.

I don't feel so badly about it. I think I'm pretty lucky to have what I have. I know lots of fellows who didn't get by nearly as good as I did. (Bilateral amputation of hands; vision: O. D. 20/200, O. S. nil.)

Many more illustrations could be cited. They are all similar in expressing a definite acceptance of their blindness as something that has happened, that is final and irrevocable, and that "you have to take it and go on in life." It is these features that characterize the "normal" emotional response to blindness: a definite acceptance of the visual disability on a realistic level, without attempt to deny, to hide or to take refuge in fantasy directed towards miraculous cures. With all this there is a desire to reconstruct one's life on a socially useful foundation, and the re-establishment of one's socio-economic independence as a productive individual.

Blinded soldiers who achieve this type of adjustment, and they include the large majority, are entirely free from any evidence of emotional depression, anxiety, fear, functional symptoms or asocial behavior. Of the 150 blind observed, 89, or approximately 6 in every 10, were considered well adjusted.

The Maladjusted Blind Soldier

There are however, some soldiers who do not make an adequate emotional adjustment to their blindness. Their failure is strongly high-lighted by their expressed attitudes. The following quotations illustrate their attitude:

I would just as soon be dead as going around blind.

I'd be better off dead. I'd rather be killed.

I feel like I'd like to die right now. I have prayed that I'd die, but I don't believe there is a God in heaven. I felt quite a few times that I would take my own life.

If I had known that I was going to lose my sight they would never have gotten me off that tank. I would have smashed it.

I feel pretty bitter, I can't see where my blindness has done anybody any good.

Oh, I don't know. I won't stay blind.

There's no point in living anymore. Now we are all heroes. When the war is over they will spit in our faces for being blind.

Of the 150 blinded soldiers studied, 27, or less than 2 in every 10, showed evidence of considerable maladjustment, while 34, or slightly more than 2 in every 10, showed slight or borderline evidence of emotional disturbance.

In differentiating these last two groups, their psychiatric symptoms were evaluated

n terms of the usual disposition and reclassification to limited duty on psychiatric grounds alone. The borderline group included only those soldiers whose symptoms were so minimal that they would not have been reclassified or otherwise restricted in their duties for those symptoms alone. Thus, psychiatric factors seriously interfering with adjustment existed in only about one-fifth of the blinded soldiers observed.

The following groups of symptoms, listed in order of frequency, occurred among the maladjusted soldiers: anxiety and hysterical symptoms, mood disturbances, undesirable aggressive behavior and attitudes, excessive dependency and apathy, unrealistic attitudes, obsessive guilt reactions, and mental confusion with memory difficulty.

Determining Factors

In those cases where defective adjustment appeared, pre-existing neurotic or psychopathic traits seemed to be the major determining factors. It might be expected that the neurotically predisposed individual would continue his neurotic behavior after his injury. Thus many such patients admitted that their somatic complaints of nervousness and gastrointestinal symptoms were no better or no worse since their injury. Moreover, such soldiers showed a marked tendency towards excessively dependent attitudes and would resist efforts to stimulate an interest in their rehabilitation. They seemed to lack any significant motivation to help themselves. Some were observed who accepted their blindness with a smug, self-contented affect usually associated with a conversion hysteria, indicating that their blindness had at last achieved what they had always wished for: complete passive dependency.

Individuals with aggressive or other psychopathic traits in their background, consistently adopted aggressive, resentful attitudes towards their blindness. Emotional depressions, temper outbursts, alcoholism, and similar behavior were common in this group. Yet, in general, their aggressions were controllable and eventually they seemed to adjust better than did the neurotic group.

The background history of each of the 150 soldiers was evaluated as to the presence or absence of significant asocial or neurotic traits. Such traits were present in 32 cases, 15 of whom developed definite evidence of maladjustment to their blindness, 11 developed only mild or borderline symptoms, while 6 achieved an adequate adjustment despite their background. The distribution of asocial trends in comparison with neurotic trends showed no significant differences.

Blindness resulting from non-combat injury and disease was frequently associated with emotional depression, guilt reactions and aggressive behavior. Such a soldier felt that his blindness was needless; and that it could have been avoided. Bitter hostility directed both outwardly and against the self was frequent. Remorse and rumination over his own responsibility, either real or imaginary, existed in some cases.

It must be appreciated that blindness is, in all instances, a powerful blow to one's ego. In the combat-incurred cases, support to the deflated ego was gained by the realization that they had "done their part" for a worthy cause. The soldier blinded by disease or non-combat injury had no such ego support. Of the 16 cases of blindness due to disease or non-combat injury, 10 demonstrated mental symptoms; 6 being definitely maladjusted and 4 comprised a borderline group.

It appeared consistently true that more difficulties arise in adjusting to slight partial blindness than to complete blindness. In the case of total blindness, the disability had a reality and finality that could not be questioned by the patient. No retreat into unrealistic attitudes was possible. On the other hand, soldiers who preserved light perception or slight vision in one eye, tended to fail in realistically accepting their blindness. Such patients would express false and futile hopes of recovery of their sight, with considerable fear and anxiety over the possible future loss of their remaining vision. Such false hopes and anxieties often interfered with their rehabilitation program and gave rise to depression, aggressive behavior or frank neurotic symptomatology. It was observed that the totally blinded soldier would achieve an adequate emotional adjustment more quickly than the partially blinded, despite a neurotic or psychopathic background. The partially blinded soldier with

such a history much less frequently accepted his disability in a constructive manner.

For example, approximately 15% of the totally blinded soldiers were definitely maladjusted mentally, but 26% of those soldiers who had light or movement perception, were maladjusted. This did not hold true however, for those cases where the vision in one or both eyes was 20/1000 or better, for only 11% of this group showed definite maladjustment, whereas another 11% had borderline symptoms. The differences here were apparently due to the fact that an individual with 20/1000 or better vision can utilize this to good advantage for taking care of himself, whereas the person with only light or movement perception obtains very little actual benefit or use from his eyesight. What little visual function remains serves only as a confusing sensory handicap.

In all too many instances, soldiers blinded beyond all hope of recovery had been told by doctors and nurses and other medical personnel during their initial hospitalization overseas or during their evacuation to the United States, that there was a possibility of their eyesight being at least partially restored. Upon being informed subsequently that the prognosis was hopeless, they consistently responded by becoming bitter, resentful and depressed. Evidently the purpose in so misinforming these soldiers was to maintain their spirits and morale until they got home. It cannot be over-emphasized that giving such false hope and casual reassurance is crassly foolish and cruel.

Without exception, all patients who had been so reassured, gave witness that such false information made everything infinitely harder for them, and only succeeded in dragging out and perpetuating their original psychic trauma. This can be avoided and minimized by informing the blind soldier in an unequivocal manner and at the earliest possible time of the hopelessness for the return of vision. There should be no falsehoods or statements such as "one chance in a million," "perhaps a miracle," and so forth. The blinded soldier will grasp pitifully at such statements and by refusing to accept his blindness will fail to make the first and most essential step towards his social rehabilitation. Such equivocations are apt to reflect the doctor's attitude and his inability to "take it" rather than the blinded soldier's lack of courage or fortitude. Experiences with all types of war casualties have demonstrated over and over again that there is no place for misplaced sentimentalities of this character.

Lack of accurate information about his eyesight and the possibilities for his future serves as a definite element in provoking anxiety reactions among blinded persons. In repeated instances of incapacitating anxiety symptoms, it has been observed that they could be alleviated by a frank discussion of the disability with the patient; by describing in detail just what happened to him; why he is blind; and by informing him as to his future prospects.

The soldier wants the truth and he wants it immediately. A postponement of the explanation of his disability and its outcome until he "feels better" only perpetuates his doubt, his insecurity, and his anxiety, and may crystallize his thoughts, feelings and action in such a way as to interfere with his social and economic rehabilitation.

Organic brain pathology did not seem to be a very important factor in the adjustment of the ordinary blind casualty coming under observation. Only 11 patients showed definite and clear cut evidence of brain damage. In 2 of these the brain damage did not seem to interfere in any way with their adjustment to the visual disability. Four showed mild symptoms, including headaches and memory difficulty, while 5 showed more marked disturbances.

A small number of patients developed anxiety symptoms and occasionally depressive reactions in response to poor attitudes by wives or other relatives. Some patients expressed considerable concern over what the relatives' attitude would be when they learned of the soldier's disability. Ordinarily, these problems were easily adjusted and no serious consequences resulted. Occasionally, a wife of a patient would be very over-protective in her attitude, insisting on guiding the patient about, looking after him, and in similar ways preventing him from learning the basic needs of self-orientation.

Therapeutic Considerations

The psychiatric therapy of disability cases is intimately bound up with the whole prob-

lem of rehabilitation. It is not the purpose of this paper to discuss the latter. Adequate reports of rehabilitation principles in army installations are contained in the literature(2). At this general hospital, the ophthalmologic and psychiatric sections have consistently worked in close cooperation to achieve the maximum adjustment of the blinded casualty. The greater number of the maladjusted casualties were treated through readjustments of the rehabilitation program to fit their particular needs. A passive, too dependent individual would get special encouragement. The aggressive patient would often require some let-up in the program, with opportunities to vent his hostility in the safe confines of the psychiatrist's office. Direct psychotherapy was given to a number of the depressed and anxious patients with good results. Unrealistic attitudes were corrected, and it often fell to the judgment of the psychiatrist as to how and when a patient was informed concerning his disability.

In general, therapeutic results were determined by the amount of predisposition. In some instances of very poor backgrounds a satisfactory compromise adjustment was possible.

Summary and Conclusions

One hundred and fifty newly blinded soldiers were given a thorough psychiatric evaluation of their previous civilian and military background and their emotional response to their disability. Of this number, 59% were found to be well adjusted to their blindness; 18% were definitely maladjusted; and 23% showed mild or borderline symptoms. The criteria for an adequate adjustment in the newly blinded soldier were a complete freedom from anxiety, depression, or undesirable aggressive behavior, or other psychiatric symptoms; a realistic acceptance of their disability; an appreciation of the need to undergo orientation and rehabilitation procedures; and a definite motivation towards the reestablishment of themselves as useful and productive citizens.

Maladjustment appeared in the form of anxiety symptoms, mood disturbances, aggressive behavior, excessive dependency and apathy, unrealistic attitudes, guilt reactions, and mental confusion with memory difficulty. These abnormal responses were determined by preexisting neurotic and psychopathic traits; by blindness occurring as the result of non-combat injury and disease; by partial blindness of a degree too slight to be useful; by false prognoses and incomplete understanding by the patient of his disability; by brain trauma; and in a few cases, by attitudes of relatives.

Blindness, as a mental stress does not appear, of itself alone, to be capable of producing abnormal mental or emotional reactions. If additional factors, such as those mentioned, be present, then pathological mental and emotional behavior will result in most cases.

Psychotherapy of the maladjusted blind soldier, through suitable orientation and rehabilitation program, coupled with individual interviews, is feasible and contributes in positive fashion to his rehabilitation prospects.

The greater number of newly combat-blinded soldiers are fully capable and desirous of re-establishing their psychological and socio-economic independence. It is a duty of society to make possible the fulfillment of these desires and the exercise of their capabilities.

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CONQUERING WAR STRAIN IN CHILDREN

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The impact of 16,000 city-bred evacuees on the 60,000 inhabitants of a rural area of Eastern England during World War II was inevitably productive of considerable disturbance. It proved a fruitful field for the observance and clinical treatment of mental and emotional tension, arising out of war conditions, in children.

In this area child guidance had been almost unheard of before the war and its advent was greeted with suspicion and even hostility. At first children were referred to the clinic for observation and treatment only for enuresis or delinquency, but as goodwill and understanding of child welfare on the part of the local authorities increased, more use was made of the clinic for cases of nervous disorder.

The clinic team at its maximum consisted of a visiting psychiatrist, with a full-time clinical psychologist and psychiatric social worker. Regular clinical sessions were held in four small towns, but most of the children had to be visited in their foster-homes or schools.

Of the total 1,006 children observed 92 were local, the rest having been evacuated from built-up areas between the outbreak of war and 1942, thus covering the early mass evacuations and the London blitz period.

Usually, for each child, three adults had to be interviewed—the foster-mother, teacher and billeting officer. There was no formality about such talks, which often took place in muddy farmyards or back-kitchens without interruption of work there. Contact with the parents at home was also made as far as possible, and special hostels were set up for children for whom the strain of fitting in to an ordinary foster-home was intolerable.

Much of the ordinary clinic routine had to be abandoned, but emphasis was always laid on direct treatment of the child with full knowledge of his problems.

Treatment was adapted to the age of each child and the nature of the case. Various forms of play-therapy, from observational to intensive and interpretative, were used, especially with the younger children, while for older boys and girls the approach approximated rather to methods of adult psychotherapy. In all groups, where the personality was a naturally healthy one with maladjustment due only to stress of recent circumstances, a form of psychiatric 'first-aid,' involving deep interpretation related to the focus of anxiety, proved very successful in obtaining lasting relief. Generally, the results in these war-time cases as compared with pre-war child guidance reports appeared very satisfactory, although it is still too early to assess the final outcome, and it was sometimes impossible to follow-up children who had returned to London and been re-evacuated elsewhere, or those whose original records were destroyed by bombing.

Intelligence tests were given to only about 40 percent—the revised Stanford-Binet in most cases, with the Collins-Drever performance tests, progressive matrices, etc. The Rorschach personality test was also employed in a number of cases.

Case classification was as follows:

Habit disorders, including enuresis, encopresis, tics, and stammers	316
Nervous disorders, including depression, anxiety, fears and night-terrors	222
Disorders of behavior, such as pilfering, tempers, and rebelliousness	244
Educational difficulties, retardation and special disabilities	153
Social problems *per se*	71
	1,006

Clearly, not all these cases can be attributed to war-strain, but this condition was observed in 80 percent of evacuees, contrasting with less than 5 percent in local children.

The three main factors in producing pathological strain were:

1. *Separation Anxiety.*—Children are unconscious artists in camouflaging their deeper feelings, and it was necessary to see below the surface to realize the acute anxiety which many evacuees suffered with regard to their own situation and about their families in the danger areas. This anxiety was often apparent in physical symptoms such as enuresis, or in such disorders of behavior as pilfering and truanting. A secondary school girl of 13, for example, had relapses of enuresis which were unaccountable until it was realized that these corresponded with periods when her mother in London failed to write to her. When the mother was induced to write regularly the wetting ceased, only to be renewed when another long period of neglect occurred. Many children expressed, usually in phantasy, haunting fears that they had been sent away because they were unloved or as a punishment.

2. *Loss of Security.*—Not only had the evacuated child lost the familiar security of his home, but, as he quickly realized, his tenure of the new environment was precarious. A child's own mother, even if unwise or neglectful, will commonly defend him against outsiders, and will not, except in rare instances, or under the stress of war, give up her possession of him. At home he may be disobedient, bad-tempered or destructive, or may wet his bed; for all these things he may be punished—but he will not be cast out. In a foster-home, on the contrary, he might be ejected for any of these reasons, or for many others. Often children were bewildered by the difference in standards in their own homes and in the new ones: actions considered as right by their parents were condemned by foster-parents and *vice-versa.* Divided loyalties also added to the conflicts of these evacuees, for if they accepted whole-heartedly the new order of things they were implicitly rejecting those whom they loved. Consequently, there was a tendency to abandon all loyalties, with resultant rebelliousness and delinquency.

3. *Direct Enemy Action.*—It was at first thought that bombing had little mentally adverse effect upon children, but later this opinion was found to be over-optimistic. The first symptoms observed by the writer were facial tics, which ceased spontaneously after a short period in a safe area: most lasting disorders included enuresis, encopresis, night-terrors, anxiety states, and depression. The last condition commonly involved a general lowering of reactivity with difficulty in concentration, often leading to educational failure. The patient seldom consciously connected this depression with being bombed, though his history showed the onset to follow this experience. In many cases there was unconscious repression of memories relating to the more terrifying incidents.

Disorders of habit formed a third of the total number of evacuee cases. Enuresis, usually accompanied by emotional disturbance, represented 60 percent of these disorders, which included also disturbances of sleep, tics and habit spasms, encopresis and stammering.

Many of the enuretics had wetted previous to leaving their homes, but the continuance or exacerbation of the symptom was in marked contrast to the experience of pre-war days, when it was commonly noted that enuretic children ceased to wet when sent for holidays or convalescence without their parents. Such a remission was very rare among evacuated children, although many of the cases cleared up quickly if prompt psychological treatment was available and if the environment could be eased.

The need for 'mothering' was especially marked among enuretics. Encopresis, on the other hand, seemed to increase in direct ratio to fear of bombing, and the phantasies of the children with this complaint were associated with regression to the massive response stage of early infancy.

Nervous disorders consisted chiefly of anxiety and depression. Some of the latter cases were extraordinarily severe, a boy of thirteen refusing food for three days and drink for 48 hours. An intelligent little girl of five, said to have been particularly happy and active at home, presented in miniature the classic picture of an adult depressive. Pale and impassive, with shoulders bowed, she remained wherever she was placed. She would not feed herself, nor make any spontaneous movement except to tap her lip until it was raw: at a loud noise close at hand she would sometimes move her eyes, but not her head. She had remained in this state for three weeks before her case was reported, and as later she slowly responded to treatment she showed herself as one of those who felt rejected as a punishment for hostile wishes against beloved parents.

Such severe cases were, happily, rare, but there was a high incidence of milder types of depression, many of which accounted for educational difficulties and which are here classified under that heading.

The number of behavior disorders is misleading, since many of these were due to the fact that foster-parents were inclined to make complaints of small misdemeanors which they would have taken lightly in their own chil-

dren. As has been noted, however, there was a tendency for evacuees to show real disorders of behavior due to lack of environmental stability and to divided loyalties.

Practically all cases referred to the clinic involved a social problem. A basic difficulty lay in the unconscious conflicts aroused in a foster-mother by the intrusion of strange children into her home. Phrases used often showed the presence of such conflicts, to resolve which the tendency was to reject the children or to possess them wholly, the latter alternative leading to quarrels with the real parents and to intolerable emotional demands upon the children.

War conditions, especially the disruption of family life and experience of enemy action, have caused an increase of psychogenic disorders among British children. These notes deal only with children, mostly evacuees, in a country area, but child guidance reports from London and other cities show a similar increase. There is thus a problem for the present and the future, since upon the generation of these war-time children will fall a heavy share in building up the post-war world and maintaining it in sanity and peace. It is a problem recognized by health and education authorities, who are making careful plans for its solution.

THE AUTOBIOGRAPHICAL STUDY AS AN AID TO PSYCHOTHERAPY

MAJOR DOUGLAS McG. KELLEY, M.C., A.U.S.

The autobiography has long been used in psychiatry and several articles have appeared in the literature discussing its values. It has been found to be a useful method of securing a certain amount of information about a patient, at the same time permitting ventilation of some of the patient's problems. It is obviously not a technique which will ordinarily produce a cure but, if properly used, can be of extreme assistance, particularly in military psychiatry.

The major problem of the army psychiatrist is how to adequately treat a tremendous number of patients with a minimum of time. The autobiography does not substitute for either an adequate history or individual interview, but acts as a supplement to both. Our procedure has been to utilize it in conjunction with group psychotherapeutic discussions. It can, however, be employed with equal value in individual case studies.

The patient must first of all be given an explanation, either individually or in the group, as to why the autobiography is desired. It must be pointed out that in order to better estimate his capacities and understand his problems, information about his entire past life is essential.

It must be strongly emphasized to the patient that these biographies are confidential, and the patient should be offered the choice of personally handing it to the therapist and burning it when finished. In the army there is very little privacy as far as the present life situation goes. For this reason a large number of patients cling tenaciously to the desire for the privacy of their pre-army existence. This resistance can be overcome by giving the patient complete understanding as to the need for the biography and reassurance as to its secrecy.

The patient should be given a general outline, preferably in writing, to follow in comprising his autobiography. We have used with considerable success, the following outline in group sessions:

AUTOBIOGRAPHY

I. Family History.

Here you must write about your father, your mother, brothers, sisters, or any other individual concerned in your care and development. Discuss each individual separately, giving a short physical description but emphasizing primarily their personalities. Indicate how you would improve them if you could. Give examples of your family life that were unpleasant and examples that were pleasant. Discuss particularly their treatment and reactions toward yourself.

II. Development.

a. School: Discuss briefly your educational background, why you stopped going to school, what subjects you liked and what subjects you disliked.

b. Jobs: List the different jobs you held and the type of employment in each. Tell why you left each job and the sort of things you like to do best.

c. Social: Discuss your ideas on dances, parties, sports and hobbies. Do you prefer mixed parties or do you like to go with individuals of one sex? Are you a good mixer or do you prefer to stay by yourself?

d. Marriage: If you are married, discuss your wife as you did your family.

III. Problems.

This is the place to discuss any problem you may have or anything which bothers you.

a. Present Illness: Detail the development of your illness and give your idea of what you think causes it. Discuss your symptoms, how they first started, when you first noticed them and describe any type of treatments you may have had. Make this discussion as detailed and as complete as possible.

b. Sex: Almost all members of the armed forces overseas at one time or other develop some question or problem concerning sex. These are normal reactions. In order to understand you better it is important to know your sexual development from your earliest activities to the present. Give a frank discussion of your sexual development, masturbation, sexual relations and so forth.

c. Religion: At times religious beliefs are found to play an important part of a patient's make-up. Discuss your religious ideas and any problems you may have in this field.

IV. Army Life.

Discuss frankly your ideas of the army. Why you entered, what you expected, and what you actually found. Tell how you would improve the army, how you would change the army if you could. Describe anything in the army which irritates or discourages you. Discuss your feelings toward your superiors, those of equal rank and those in lower ratings. How do you get along in the army?

This outline should be read to the patient and various brief explanatory amplifications offered. The need for detail should constantly be emphasized and the value of the autobiography in the total psychiatric assessment should be explained. The patient need not be told of the fundamental use of the study and in most cases it will suffice to simply point out that it helps the therapist to understand the patient better from an emotional point of view and also acts as a sort of instrument for better vocational placement.

The patient will require several hours to prepare an adequate biography but it will be time well spent. The autobiography has a number of important values which are seldom considered. Obviously it is a source of information. It can be quickly read and important sections noted for further individual or group discussion.

Secondly, it is of diagnostic value in that the writing, the detail, the phraseology and even the length aid in understanding the patient. The actual weight of the manuscript will frequently indicate much concerning the patient's behavior. Scanty biographies point to either inadequate intellectual faculties or to a lack of interest or desire on the part of the patient to cooperate. Such patients will need further stimulation and should receive additional help. Lengthy, detailed biographies are produced either by individuals who have a closer desire to help themselves or by patients with obsessive-compulsive or paranoid trends.

The biography also acts to point to patients who require additional psychotherapy or prolonged individual discussions. This feature is of great value in group psychotherapy for individual discussions are ordinarily minimal. These needs are indicated in several ways. The patient may actually write under one of the headings that he has specific problems of a given nature which he would like to discuss. Again, he may flatly refuse to write a given section of the autobiography, stating that he will not put it down on paper. In either case there is a considerable time saving factor for the therapist. The problem has been spot-lighted; the original resistance to discussions have already been overcome and the therapist and patient can directly attack the problem concerned without preliminary time consuming conversation.

The actual material in the biography, which frequently would require a number of interviews to collect, often points to deeper problems which require further individual elucidation. From the patient's point of view, I would agree fully with Blair [1] that, "the frankness with which the majority were written surprised me." The patients all feel considerable relief in putting their problems down on paper. This is particularly true in army life where the soldier seldom has a chance to freely express his innermost feelings. Also, many patients feel easier in writing things they hesitate to divulge orally. The autobiography thus permits a certain amount of ventilation and catharsis of the problems of the patient.

Then too, when things are put on paper, they act to disensitize the patient to their importance. In everyday life when some problem bothers us, if we sit down and write a long letter to a friend, pouring forth our troubles, we feel considerably better whether we mail the letter or not. If we do not mail the letter and re-read it after a day or two, in most instances, we find that the problems with which we were so concerned, seem less important. This is a very useful approach and once the patient has poured forth his annoyances, his emotional upsets and his discouragements, he feels better. If his autobiography is then read back to him with appropriate discussion here and there, it tends to minimize these reactions and his problems seem much simpler.

Finally, the autobiography acts therapeutically to help the patient by crystallizing his concepts for him. In order to describe his

[1] Blair, Donald. Group psychotherapy for war neuroses. Lancet, Feb. 13, 1943, p. 204-205.

complaints, he is forced to clarify his ideas and his total pictures of thought are more clearly organized.

In our experience with more than 2000 patients the autobiography has proved an extremely useful tool. It acts as a substitute for individual interviews, both from the point of view of the patient and of the therapist.

It provides not only information and indications for individual discussions, but acts as an outlet for the patient's emotions and presents the opportunity for crystallization of his feelings.

Finally, it gives the patient something definite to do. He feels that he is contributing to his own well-being. He is actively employed in doing something which will be of benefit in his case. These feelings of self accomplishment should be emphasized and, if sufficiently encouraged many patients will spend hours working on their autobiographies.

In a busy psychiatric service, this alone makes the technique of use, for it extends the scope of the therapist's ability. Utilizing this technique in combination with group therapy, it focuses the attention of the patient on his problems, which then become clear in the light of the group discussions. We have found it a most satisfactory tool; both as a diagnostic aid and as an asset to actual therapy itself.

THE CENTRAL NERVOUS SYSTEM IN MORPHINISM[1]

JEAN M. SWAIN, M.D.

Within recent years renewed interest has been centered on the effects of many of the familiar narcotics, and in particular morphine. Morphine has been one of the most frequently used and most relied upon drugs available to the physician; yet it is well recognized that the site and mode of its action, as well as its specific pharmacologic characteristics, have not been adequately explained. It is generally accepted that morphine produces an extremely profound effect upon the cerebral functions, and it would appear that a drug so potent in its capacity to alter the physico-chemical mechanisms within the nervous tissue must produce more than transient disturbances. It is therefore surprising that so few clinical residuals have been reported in the literature.

Haymann(1) in 1909 reported a case of a polyneuritis associated with psychosis in a 31-year-old morphine addict. No similar case has appeared in the literature. Kendall (2) in 1925 observed a case of acute, nonfatal morphine poisoning in which extensor toe responses were present. He questioned the value of such findings as evidence of a pathologic process. Gordon(3) described two patients in whom spasticity developed shortly after a heavy dose of morphine. One of these patients became semi-comatose and developed clonic contractions in the upper extremities and trismus one half hour after taking 1½ grains of morphine sulfate. There later appeared a spastic paralysis of the lower extremities with increased tendon reflexes, ankle clonus and positive Babinski phenomena.

An interesting and unusual case was reported by Anderson(4) in 1848: a young woman was given ¼ grain doses of morphine sulfate by mouth every two hours as a hypnotic. After the third dose she complained of tingling and prickling sensations in the extremities. After the fourth dose she developed rigid contractions of the hands and feet with the thighs flexed on the abdomen. The muscles of the tongue and glottis were rigid and she presented a rather typical generalized tetany. Recovery took place on withdrawal of the drug. Leyser(5) described a case of a 38-year-old addict who was seen following an attempted suicide by morphine overdosage. She was in a delirious, semi-comatose state and had a thick, indistinct speech, nystagmus, intention tremor, past-pointing and a tendency to fall to one side. The condition cleared up in about 6 days. Leyser felt that tremors of the tongue and hands, hyperesthesias, neuralgias, slurred speech and occasionally ataxic gait were among the symptoms regularly presented by morphine addicts.

Gordon(6) in 1908 published a comprehensive study emphasizing the mental symptoms observed in morphine poisoning. He reported a series of 60 cases of acute poisoning. Typically these patients first displayed a marked agitation with overstimulation, euphoria and volubility, followed by vertigo, somnolence and finally coma. Convulsions occurred terminally in the fatal cases. In 5, somnolence was absent and the agitation persisted with delirium and terrifying visual and auditory hallucinations. During convalescence vertigo, mental hebetude, temporary aphasia or blindness occurred. Of the 52 cases that survived, 35 showed mental disturbances, primarily slowness of thought and difficulty in comprehension for weeks following the acute episode. His total series also included 70 cases of chronic morphinism, of which 8 exhibited melancholia with suicidal tendencies and confusion and 9 resembled a manic-depressive type of psychosis. Gordon concluded that the psychosis due to morphinism was not of any one particular type, but that there was an element of confusion present in all patients.

Several investigators have reported studies of morphine addict groups using standard psychometric evaluation methods. Partington(7), employing the Babcock test for the measurement of mental deterioration, found

[1] From the Department of Neuropsychiatry, University of Minnesota. This study was aided by a grant from the University of Minnesota Graduate School.

that the addicts, both young and old, were significantly deficient in the tests of learning and motor abilities. Brown, quoted in the above report, analyzed the scores made in incarcerated drug addicts on subtests of the Army Alpha examination and concluded that there was a distinct scoring pattern for the group—tests of word knowledge and previously acquired information were found to be at a much higher relative level than tests of relationships. Hall(8), using the Babcock test, noted a similar characteristic pattern indicative of deterioration in addicts, and by using control groups was able to rule out the factor of malnutrition in influencing the results. Finally, Andrews(9) has reported changes in the electroencephalogram pattern during addiction, the significance of which is not certain.

From the above scattered reports in the literature, it would appear that morphine can and does produce definite irreversible changes within the nervous system. In view of the paucity of histopathological studies to substantiate such impressions, it would seem of value to report in some detail the tissue changes within the nervous system in 3 cases of morphinism which were sent to our laboratory for study. The tissues of all cases were prepared with the customary special stains used to demonstrate changes within the cerebral elements.

Case Studies

Case 1.—Baby Boy U., a 20-day-old Negro infant was transferred from the newborn nursery to the contagion ward for the treatment of impetigo. The birth history (April 28, 1943) was normal and the infant appeared to be in good health otherwise. The skin lesions responded satisfactorily to routine therapy. On May 19, he had three watery stools and an order was written for six minims of camphorated tincture of opium every 4 hours for three doses. Through error, tincture of opium was substituted and the infant received two doses, at 6 and 10 p. m., before the mistake was discovered. When an attempt was made to arouse him for an 11 p. m. feeding it was noted that he was slightly cyanotic and the respirations were labored and irregular. Coramine and artificial respiration brought about a fairly prompt response, but 30 minutes later respirations again became irregular and short clonic contractions of the extremities were noted over a period of 3 or 4 minutes. Coramine and artificial respiration were again administered but with progressively less response. Complete respiratory failure and death ensued at 4.15 a. m. of May 20, 1943.

Autopsy.—The gross examination showed marked atelectatic changes in the lungs. There were several epicardial petechiae. The brain appeared normal on gross examination.

Microscopic Examination.—There was extreme generalized vascular congestion. Scattered vessels showed perivascular bleeding with the red cells escaping through the vessel wall to fill the perivascular spaces and even spreading into the surrounding tissues. Acute nerve cell changes were visible throughout the brain. Many of the cortical neurons were markedly swollen and partially or completely chromatolytic (Fig. 1). Scattered elements had completely lost their staining properties and appeared as cell ghosts. The most prominent cell changes, however, were observed in the cranial nerve nuclei of the medulla, in particular the dorsal nucleus of the vagus. Here most of the neurons were ballooned out with a fragmentation of the cell processes, resulting in a rounded cell outline. The Nissl substance was extremely fine or entirely absent, especially in the perinuclear areas. Even the nuclei showed early changes and stained more faintly than normal. Scattered nerve cells throughout the nuclear aggregates in the midbrain, pons and medulla showed similar acute changes with the isolated involved elements being surrounded by apparently intact nerve cells.

Around many of the distended vessels the myelin sheaths also showed very early alterations, suggesting the initial stages of a perivascular demyelinization (Fig. 2). Occasionally, the myelin sheaths were definitely swollen but contained intact axons. No breakdown in the myelin sheaths nor vacuole formation was observed.

The entire picture was that of a very acute toxic process, involving primarily the nerve cells but suggesting a definite vascular influence.

Case 2.—J. C. G. was a 30-year-old male who was admitted to the hospital complaining of weight loss, weakness, insomnia, depression and frontal headache. He had been a morphine addict for 4 months, taking as much as four grains daily subcutaneously (?) but had been able to obtain only two injections of the drug in the 2 weeks preceding admission to the hospital. Initial neurological examination revealed irregular, slightly dilated pupils which reacted sluggishly to light. There were nystagmoid movements on lateral and vertical gaze. Abdominal reflexes were present; the knee jerks were diminished. The Oppenheim sign was positive on the left. The patient was discharged after a 2 week hospital stay. That same day he was found in a semi-comatose state. He told an attending physician that he had taken twenty grains of morphine sulfate that day. Death occurred 2 days later, from respiratory failure.

Autopsy.—Postmortem examination was essentially negative except for numerous sub-epicardial hemorrhages of 2-3 mm. diameter and a terminal bronchopneumonia.

Microscopic Studies.—Unfortunately only a few

sections of brain tissue were available for microscopic study. These few pieces, however, presented sufficient material to permit evaluation of the type of destructive process resulting from the drug addiction and the acute poisoning. All sections showed a moderate degree of vascular congestion. Many of the cells of the basal nuclei were abnormally swollen and the cytoplasm appeared vacuolated. The cell processes were not discernible in the majority of instances. A few of the neurons, irregularly distributed, were markedly swollen and disintegrated to the extent that normal cell architecture could not be made out. Sections through the medulla again demonstrated the most severe damage, with the cranial nerve nuclei, in particular the dorsal nucleus of vagus, showing both acute and chronic nerve cell changes. Here the cell outlines could not be distinguished in many cases, and the Nissl substance had almost completely disappeared within the ballooned-out cell bodies. The nuclei in these cells were swollen and eccentric in position. Neighboring cells appeared elongated, homogeneously dark in color; their nuclei were stained very lightly and were difficult to outline accurately. Many of the cells in the olive had dropped out completely. The myelin sheaths appeared swollen and frayed. There were a few areas in which an early perivascular distribution of the demyelinating process was seen.

CASE 3.—A. M., a 29-year-old housewife, was brought to the hospital by the police after she had been found wandering about the street in an aimless fashion. According to her account, she had taken ten to twelve grains of morphine sulfate by vein daily over a period of 15 years. She had been unable to obtain any morphine in the previous 40 hours. She complained of muscular cramps and vomiting beginning the day prior to admission. Physical examination revealed a fairly well nourished young woman who was very restless and uncooperative. Her pupils were equal and regular but did not react to light. There were innumerable puncture marks over the veins of the arms with many small scars from infected sites of injection. The neurological examination was reported as negative. The hemoglobin was recorded as 100 percent, the leukocyte count 15,400 with 78 percent polymorphonuclears. The urine showed an occasional white cell. On the day of admission she was started on a regimen of insulin therapy. Vomiting continued at frequent intervals, at times projectile in character. She was incontinent of urine. On the third hospital day, 2 hours after her last insulin dosage, the patient lapsed into stupor from which she could not be aroused. During the next three-hour interval she was given 500 cu. cm. of a 35 percent glucose mixture through a nasal tube and 1 cu. cm. of adrenalin in divided doses subcutaneously. She became progressively more comatose, Cheyne-Stokes respirations with cyanotic tinge of the skin appeared and her pulse rose rapidly. She became very hyperactive and restraints were required. Shortly before death on the morning of the fourth hospital day, her pulse was recorded as 166 per minute and respirations 78 per minute. The blood at autopsy contained 170 mg. percent of sugar.

Autopsy.—At postmortem examination several linear subpleural hemorrhages were found in association with a moderate amount of hemorrhage throughout the lung. Examination of the brain and spinal cord was negative except for the presence of fine petechiae throughout the basal nuclei.

Microscopic Studies.—Microscopic sections showed widespread alterations throughout the grey and white matter. The cerebral cortex was extensively involved with many of the nerve cells showing changes primarily of a chronic nature. These cells were shrunken with pyknotic nuclei which were often indistinguishable from the heavy chromatin clumping of the distorted cell body. The cell processes were often absent or appeared only as shrunken cytoplasmic fragments protruding from the cell body. In almost all sections of the cortex areas of devastation could be made out which were entirely devoid of nerve cells. All stages of this chronic nerve cell damage could be discerned, from mildly altered elements to tiny pyknotic remnants of the original nerve cell. Scattered among these severely damaged structures were many neurons showing acute changes and indicating a more recent process. These cells were slightly swollen and showed a beginning chromatolysis. In some areas isolated cells were seen which had lost all of their staining properties and appeared as ghost cells (Fig. 3). Many apparently uninvolved ganglion cells still were intermingled with these acute and chronically damaged elements. Nerve cell changes of a similar but less extensive nature were seen in the caudate nuclei and globus pallidus. The cranial nerve nuclei were severely affected with the most obvious damage occurring within the medulla.

Even more pronounced than the neuronal alterations were the changes occurring within the white matter. Here were observed numerous scattered areas of focal and perivascular demyelinization. These foci of myelin destruction were not arranged concentrically about the blood vessel but seemed to extend irregularly into the adjacent tissue (Fig. 4). The myelin damage was often complete with a rupture of the myelin sheath and a complete destruction of the axon. The severity and extent of this process was quite variable, indicating a varying chronicity of the pathological process.

Aside from the myelin changes, the white matter contained scattered glial changes, consisting of focal collections of glial elements, as well as very extensive diffuse proliferations of the subependymal glial elements.

Comment.—This case is of unusual interest because of the severity and chronicity of the cerebral changes. These alterations seem to correlate very well with the long history of a fairly heavy morphinism. The question arises as to the part the insulin given during her hospitalization may have played in the production of the cerebral changes. Since most of the significant cerebral changes were definitely of a chronic nature, it may be definitely assumed that the insulin was an irrelevant factor which need not enter into consideration of etiology.

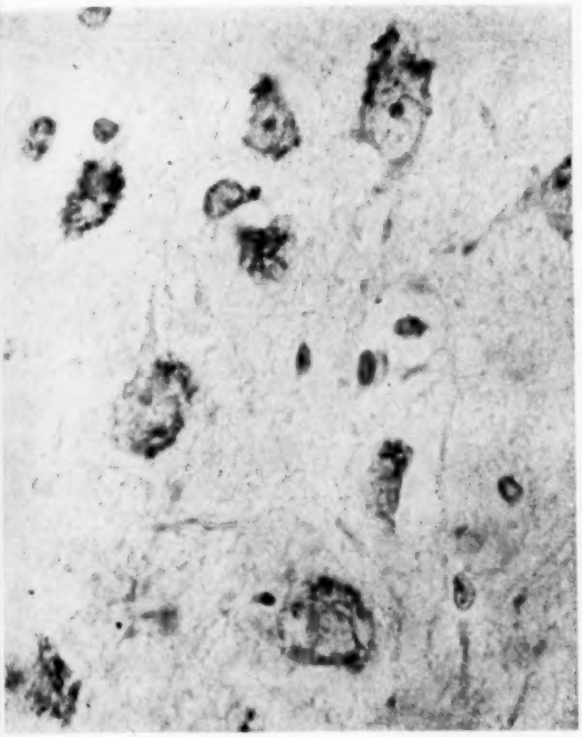

FIG. 1.—Sections through a cortical area, showing neuronal swelling, chromatolysis and fragmentation. The surrounding parenchyma appears intact. Nissl stain.

FIG. 2.—Very early perivascular myelin changes. Only occasional myelin sheaths have broken down to form tiny vacuoles. Weil stain.

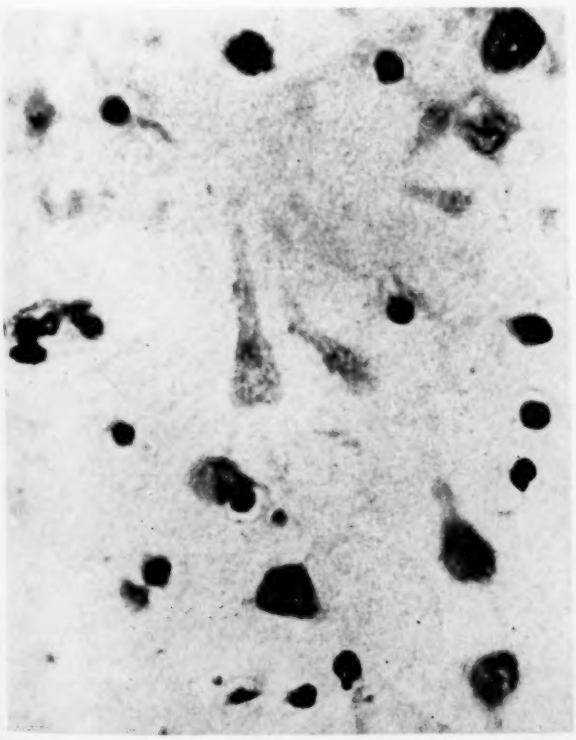

FIG. 3.—The two centrally situated cells have lost most of their tinctorial properties, forming ghost cells. The surrounding nerve cells appear somewhat shrunken and pyknotic. Nissl stain.

FIG. 4.—Characteristic appearance of a fairly advanced perivascular demyelinization. The myelin destruction is not uniform, but extends irregularly into the adjacent tissues. Weil stain.

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It is possible the insulin may have led to some of the acute nerve cell changes observed in this case.

Discussion

Since clinical observations of patients suffering from severe, acute or chronic morphinism leave little doubt that this drug must produce tissue changes not only of a reversible but also of an irreversible nature, it is surprising that so few reports have been published describing such alterations. Probably the most exhaustive studies on the brain changes in man in morphine poisoning have been reported by Creutzfeldt(10) and by Wiemann(11). Creutzfeldt described a case of a 26-year-old chronic morphine addict who took unknown quantities of both veronal and morphine as a suicidal measure. The pathologic findings were attributed primarily to the morphine. Postmortem examination revealed congestion and edema of the brain. In Nissl preparations definite nerve cell changes, consisting for the most part of a granular disintegration of the Nissl substance, were seen in the cortex of the frontal and temporal areas, in Ammon's horn and to a lesser degree in the central areas and the occipital lobe. The medium sized neurons of the third and deep fifth layers of the cortex were most affected. The cell nuclei were pale and the nucleoli often marginal and vacuolated. Many of the cell processes appeared fragmented. The small nerve cells of the caudate nucleus appeared swollen and pale. The adventitial cells of the vessels in the area of the caudate nucleus and the oligodendroglial cells contained "siderophile" granules. Similar changes were found in the dentate nucleus. A few veins in the diencephalon and midbrain were surrounded by a heavy lymphocytic infiltration. With the Herxheimer stain there could be demonstrated a heavy fatty degeneration of all cortical cells, the nerve cells as well as the glial and mesodermal elements. This fatty degeneration was considered by the authors to be one of the outstanding findings and was interpreted as being due to chronic morphinism. Spielmeyer(12) also felt that fatty degeneration of the nerve cells, especially in the horn of Ammon, was the outstanding histologic finding in morphinism.

Weimann(11) reported several case studies of acute and chronic morphinism. Microscopic studies of a case of suicidal poisoning in a 25-year-old man revealed an extensive diffuse degenerative process in the entire central nervous system, particularly in the cerebral cortex. Again the most marked changes were demonstrated by the fat stains, showing the ganglion cells and the endothelial cells of the vessels heavily laden with fatty material. The fatty deposits in the cortical areas occurred in a regular layer arrangement, the third cortical layer being the most involved. The horn of Ammon was extensively damaged. Weimann felt that morphine poisoning produced chiefly a degenerative process involving primarily the ganglion cells. Occasionally regressive changes did occur within vessels of the cortex, resulting in small infarcted areas. Weimann and Marenholtz(13) described a case of acute poisoning (death occurred 6 weeks after the ingestion of the morphine) in which the alterations were limited to the basal ganglia and the medulla. Large foci of symmetrical softenings appeared in the pallidum similar to that seen in carbon monoxide poisoning. Favarger(14) also produced evidence that morphine often affects the central nuclei more than the hemispheres. In both experimental and human autopsy material he was able to isolate more morphine from the central nuclei than from the hemispheres.

Experimental studies have been more numerous than the observations on human material but have indicated somewhat similar findings. Nissl(15) in studying the ganglion cells of the brain in acute morphine poisoning reported alterations primarily in the staining properties of the intercellular substance of the cerebral cortex so that the dendritic processes were discernible for unusually long distances from the cell body. The nuclei of the nerve cell were small, more elongated, and darker than normal. Saratchoff(16), doing experimental work with dogs, noted in the brains of the animals killed in the acute phase of morphine poisoning, a swelling of the nerve cells with the formation of vacuoles and a loss of the cell processes. These abnormalities were most prominent in the anterior horns of the spinal cord and to a lesser degree in the medulla and the cerebral cortex. In the tissues obtained from

animals chronically addicted, the Nissl substance had more or less disappeared, the cytoplasm appeared gelatinous, the nucleus stained poorly and the cell membrane was indistinct. Mankowsky(17) in a similar experimental study also reported extensive changes (chromatolysis and vacuolization) within the anterior horn cells of the spinal cord, the pyramidal cells and the Purkinje cells. The findings were most marked in the cases of chronic poisoning.

Other tissue elements within the brain have occasionally been reported as involved in morphine poisoning. Brack(18) found the pathologic alterations primarily confined to the vessels within the brain, consisting of hyaline, fibrin and occasionally fat emboli in the center of small ring hemorrhages. Wolff and his associates(19), in experimental studies with dogs, observed degenerative swelling of the oligodendroglia in all but the very mildly intoxicated animals. The astrocytes and microglia were relatively intact. These authors concluded that chronic morphine poisoning resulted in more marked changes than acute poisoning, both in the neurons and interstitial cells. Ma(20), working with rats, divided the acute reaction to morphine into two phases, a period of stimulation followed by one of depression. He reported that during the first stages there was an increase of Golgi material of the nerve cell, the mitochondria remaining unchanged. During the latter stage the Golgi material decreased and the mitochondria were slightly increased in number. Other workers (MacEwen and Buchanan(21) and Horning(22) have been unable to duplicate his findings.

Considerable extremely interesting experimental data have accumulated, but unfortunately, as is true of much animal experimentation, conclusions drawn on the basis of the evidence cannot be applied directly to man. It is, nevertheless, valuable to review some of the more recent work bearing on the pharmacological action of the drug, which may be of interest to the clinician. It has been supposed that the predominant action of morphine in the central nervous system is depressant, but there is more evidence against this view than for it. It is at least certain that morphine is a stimulant in certain doses and at certain levels of cerebral functioning. As far back as 1915, McGuigan and Ross(23) noted that with the injection of morphine into frogs 30 to 120 minutes preceding the injection of a convulsant dose of strychnine, the onset of the post-strychnine convulsions was much more rapid. If the two drugs were given simultaneously, no such synergistic effect was obtained. They therefore postulated a morphine oxidation product which reacted with the strychnine to enhance its stimulant properties.

Tatum, Seevers and Collins(24) have stated that the minimum lethal dose of morphine in a dog, cat or rabbit is convulsant and no elevation of the minimal lethal dose can be developed by prolonged administration. In monkeys also very large doses produced convulsions and death; and though a tolerance to the depressant action of morphine could be developed, the minimum lethal (convulsant) dose was lowered rather than raised. As the narcotic effect in the animals decreased, the convulsant action became more pronounced and convulsions appeared with doses which, given singly to non-tolerant animals, did not cause convulsions. In 1934, Nieuwenhuijse(25) published observations on a number of experiments in which he produced small cortical lesions, symptomless in themselves, in rabbits. The subsequent injection of large, ordinarily subconvulsant doses of morphine brought about peculiar Jacksonian type convulsions first on the contralateral, then spreading to the ipsilateral side. A similar result was obtained even after an interval of several weeks. He also noted that the local application of morphine to the undamaged cortex resulted in periodic motor discharges resembling Jacksonian seizures, and he demonstrated that the cortex of rabbits narcotized with morphine was more sensitive to faradication, responding to a minimal stimulus with a Jacksonian type seizure.

Hazelton and Koppanyi(26) in 1942, confirmed the impressions of McGuigan and Ross in demonstrating a definite synergistic relation between morphine and central nervous system convulsants (picrotoxin, strychnine, coramine, metrazol). They furthermore noted that the occurrence of convulsions did not necessarily coincide with the respiratory depression, *i. e.*, the convulsions were probably not due to anoxemia. Using a somewhat different type of approach to

the problem. Wikler(27) and Wikler and Masserman(28) reported that small doses of morphine in animals result in changes which appear to represent disintegration of adaptive response associated with a poorly coordinated motor system. Larger doses give evidence of delayed stimulant actions, startle response, muscle twitches, etc., superimposed on the former.

Most of the recent investigations have emphasized the biphasic action of morphine—initial depression followed by excitation, the relative intensity of the two varying with the species. With small doses the depressant action is hardly detectable but with large doses the initial depression may be very short, with the stimulant action predominating. The fact that in experimental work recovery from the depressant action in moderate doses appears to be much more rapid than recovery from the excitant action, is the basis for the suggestion made by Tatum *et al.* that morphine addiction be treated by abrupt withdrawal in order to avoid the accumulation of excitant action. In view of this excitation action one might well caution against the liberal use of morphine as a therapeutic agent in the various convulsant disorders.

Summary and Conclusions

1. A brief review of the literature concerning the central nervous system involvement in morphinism is presented. Although there are scattered clinical and pathological reports which indicate that acute and chronic residuals may result, no consistent picture of the neurological involvement can be formulated.

2. Histopathological studies are reported in three cases of morphinism in which the illness varied in duration from the very acute to the chronic stage.

3. Definite histological alterations were present within the brains of all cases and consisted of acute or chronic neuronal alteration and destruction and irregular perivascular demyelinization. The damage was similar in all cases but was more apparent in the chronic ones. The most severe nerve cell changes were observed in the medulla.

4. There is good experimental evidence to suggest that morphine at certain doses may be a cortical stimulant and is probably contraindicated in toxic conditions resulting in convulsive phenomena.

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SOME RELATIONSHIPS BETWEEN EXCITEMENT, DEPRESSION AND ANXIETY

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During the course of a number of studies of the anxiety syndrome (Cameron, 1944, a, b) considerable difficulty was experienced in differentiating between anxiety and depressive reactions. Many cases which, on first examination, were designated as anxiety states or as depression, proved on closer examination, to show both types of reaction.

In current practice this fact is very usually missed or ignored. The reason for this is to be found in the tendency on the part of the observer to conventionalize his observations into the form of commonly accepted concepts (Cameron, 1941, a). The recording of cue observations by the investigator, particularly if those cue observations are made during the early stages of his examination of the patient, tend to determine his final conception of the patient's reaction.

Where, for instance, the patient at the outset complains of feeling scared, tense, or of being unable to go into crowds or where he complains of being downhearted, slowed-up or of feeling that life is not worth while, the observer will tend to ask just those questions and to make just those observations which fall into his picture of anxiety or of depression respectively.

Because of this, important interrelations which exist between the anxiety and depressive reactions and, as will be shown later, between them and the excitements have not been recorded. It is with the demonstration of these interrelations that this investigation is concerned.

METHOD

In order to eliminate the effects of conventionalization the following procedures were carried out on 40 patients. First, a routine outline of examination was followed regardless of the preliminary impression created by the patient's behavior. Moreover, the attitude maintained by the examiner throughout was one of open-mindedness as to the existence of relationships between the three syndromes rather than the customary attitude that these syndromes are relatively self contained.

Second, sound records and movies were taken of the patients during interview with a physician, walking and doing cross-word puzzles. Cinemanalysis (Gesell, 1935) was found especially valuable.

Third, the examinations of the patient during the active stages of his illness and during recovery were contrasted.

Fourth, patients who showed transition, *e.g.*, from depressive to manic reactions or from depressive to anxiety reactions were examined with special reference to the nature of these transitions.

RESULTS

Almost all patients who were considered to have a reaction which was predominantly depressive in nature showed some anxiety symptoms. Prominent among these were complaints of being tense, scared, or being unable to relax, of having aching in the neck, of tremor, tightness in the throat, and of feelings of unsteadiness.

Similarly all patients who were considered to be primarily anxious in their reactions showed some depressive symptoms. Among these were feelings of being depressed, of feeling that life was not worth while, of suicidal ruminations. Difficulty in making decisions, sensitiveness and feeelings of guilt were frequent complaints (Table I).

The major differentiating points were, first, that of emphasis. In the first group there was more emphasis upon feeling sad, of being unable to manage the day's work, of feeling slowed down; delusional and hallucinatory misinterpretations were, at times, of value in differential diagnosis. It must be pointed out, however, that as we have become concerned with earlier cases the relative number of depressive patients presenting delusions and hallucinations has rapidly decreased. The emphasis upon the delusion in

the earlier descriptions of the depressive reaction is a reflection of the fact that at that time commitment was often a necessary preliminary to treatment.

A second major differentiating point is the relative absence of manic attacks in the history of predominantly anxious patients. Moreover, the primary depressive reactions tend to be more circumscribed.

Of fundamental importance is the fact that in the depressive reactions inhibition appears to play a primary rôle. This can be particularly clearly seen in contrasting moving pictures of depressive and anxious patients. The

TABLE I

Shows the presence of depressive symptoms in an anxiety state and of tensional anxiety symptoms in the hypomanic reaction.

Patient "A" was a married woman of 28 who, for the last six years, had shown repeated depressive reactions lasting from a few weeks to a few months. She was apparently quite well between attacks.

Patient "B" was a chronically anxious woman whose symptoms were of many years duration and whose pattern of anxiety was largely gastro-intestinal in type.

Patient "C" was a woman of 30 who had had recurrent attacks of depression and excitement since the age of 19. Was in the hypomanic reaction at the time of study.

Patient	A	B	C
Depression	Feels depressed. Sleeps poorly. Eats inadequately. Moves and talks slowly. "I won't talk"—feels that other people are talking about her and are against her. "I won't work." "I intend to do things and I can't—I don't know why." "I start to do things and then I make a mess of everything." "I have made so many people unhappy that I am unhappy myself." "I guess it is my own fault that I am so miserable."	"When I am tightened up I am a little unhappy. As I get more and more tightened up I get more depressed." "When I get tightened up my energy goes. My interest and my energy go. I do much less." "When I get tense I tend to get still. When I get tense I am like a bump on a log."	
Anxiety	Feels tightened up, especially in the abdomen. "I never feel relaxed, the least thing I worry about." Says that she trembles a lot, legs jerk as she goes to sleep, feels unsteady on walking. Throat tightens up, it is hard to swallow, voice becomes unsteady at times. Some neck aching. Occasional palpitations. "The least noise makes me feel as though I were going out of my head." Hands and feet become numb at times.	Anxious, worried about appetite and vomiting. "The thing that is wrong is that I am not eating enough. I am vomiting." "I am very worried about my condition and about losing weight." She becomes nauseated and vomits when under stress. "I feel tightened up. It starts very slowly, it takes weeks. First I begin to lose a little appetite, then it tightens up a little more and I eat less, and then it tightens up so much that I bust and then I vomit." Walks and talks very rapidly. Hands cold and wet. Tongue and circumoral tremor are quite marked. Legs jerk on going to sleep.	"Noises go right through my head." Her hands are cold and wet. "Sometimes I do feel tightened up. At times it is more noticeable than others. I feel it in my head mostly, my eyes feel funny, not right as they should be." Patient claims that she talks so much and so loudly so that she will drown out the noises around her and thus prevent herself being unpleasantly stimulated by them as described above. Has feeling of tension across mid-abdomen.

TABLE I.—CONTINUED

Patient	C
Excitement	Patient is overtalkative, rambling and discursive. She lacks a goal idea. Will talk endlessly on a series of loosely related topics. She is restless, continuously moving from one part of the ward to another. She walks noisily, stamping her feet down and obviously endeavoring to attract attention. She is assertive and aggressive. She interferes with and annoys the other patients. "I have to do things, I probably annoy other people." There is a very considerable drive to activity and patient feels exceptionally capable. "I feel so free I could fly."

behavior of a depressive patient is, as it were, encased by his greatly increased inhibition. Out of this encasement only those action tendencies can break which are strongly motivated. All those minor action tendencies of slight motivation which ordinarily characterize the behavior of the individual as he sits or walks or talks with those around him are eliminated.

Study of our moving picture records as well as direct observation showed how infrequently the depressed patient crossed his knees, stood with his hand on one hip, played with objects on the physician's desk, gesticulated save in terms of the well known hand-rubbing or hand-mouth movements. It was striking how infrequently any movements of the hands of the depressed patient passed outside the silhouette of his body; none of our depressed patients, for instance, on sitting on a couch extended their arms along the back of it.

The absence of small talk is also conspicuous. The patient makes none of those running commentaries which he does make later on recovery. He has no remarks to make about what he is asked to do, has nothing to say about the fact that a movie is being taken of him or that he is talking into a microphone.

In walking, apart from the shortness of stride, there tends to be a loss of associated arm swinging. In its place is a curious pendulum movement of the arms. Each time the patient brings his foot down and thereby momentarily checks his forward progress, there tends to be a forward jerk of both arms. Under normal circumstances in passing backwards and forwards in a small space, on reaching the turn the head tends to turn relatively independently of the body. Usually, though not always, it turns first, apparently in order to permit the individual to observe his return course before he actually starts out. In the depressed patient this independent head turning is almost always absent. The depressed patient turns in a block.

When, however, he has recovered and, indeed, often as he is recovering and his inhibition is beginning to decrease, these less strongly motivated action tendencies start to break through. He begins to show once more an associated swinging of his arms in walking, the head begins to turn relatively independently of the rest of the body, the arms pass out beyond the body silhouette and the great range of expressive movements of limited motivation begin to reappear.

In the primarily anxious patient this encasement is present to much lesser degree. Slowing is much less frequent. Even in

patients in whom the reaction is severe there may be an ability to walk rapidly, to count almost as quickly as usual.

In the patient who shows a manic excitement this encasement is not present. Despite the fact that the manic excitements are described as alternate phases to the depressive reactions, their immediate relations were found in the present investigation to be with the anxiety states.

In both overactivity was prominent, though in the anxiety states this overactivity was continually curbed by the degree of inhibition which was present. In both reactions the patients state that they either want to be doing something all the time or feel that they have to. In both groups complaints of difficulty in relaxing and settling down are noted. In several of the manic excitements, as in most of the anxiety states, there are complaints that noises and other disturbances in the immediate environment are upsetting. Actual evidence of increased tension is found in some of the manic patients, *e.g.*, coldness and sweating of the extremities. Moreover, where the manic patients are prevented from expressing themselves in action, feelings of frustration with rising tension ending in fits of irritable explosiveness are common.

Inhibition which was so dominant in the depressive group and which is present in varying degrees in the anxieties is at the minimum in these manic excitements. The movements are free and expansive. There is an abundance of expressive movements, much small talk; a great range of action tendencies, no matter how slightly motivated, come to expression. Expressive movements readily pass beyond the body silhouette and there is no evidence of lack of associated arm swinging on walking or of a tendency to turn the head in a block with the body. These findings are summarized in Tables II and III.

DISCUSSION

Consideration of the relations which exist between the excitements, depressions and anxieties—the E.D.A. syndrome—suggest that these relations may be expressed in terms of the varying dominance of the two components of tension, namely inhibition and facilitation.

Before proceeding with discussion we wish to emphasize that in placing these reactions in relationship to each other in terms of facilitation and inhibition we are dealing with the problem at a phenomenological level. We are not concerned with questions of etiology. We do not propose to touch upon such matters as the effects of the immediate environment, the catastrophic incident or to deal

TABLE II

DEPRESSIVE AND ANXIETY SYMPTOMS

Primarily depressive symptoms:	*Inhibition is in definite dominance, facilitation minimal.*
	Slowed down.
	Takes longer to do things.
	Walks more slowly.
	Limited stride.
	Lack of associated movements, *e.g.*, arm swinging on walking.
	Lack of accessory movements, *e.g.*, hand on hips, hand supporting chin, crossing knees, "doodling."
	"Block" turning, *i.e.*, head turns with body.
	Sits inactive for long period.
	Stomach movements slowed or stopped.
	Gastric secretion reduced or absent.
	Talks slowly.
	Takes longer to carry out a well practiced task, *e.g.*, counting up to 50.
	Talk is limited in amount.
	Talk tends to be limited to topics of concern.
	Unhappy, can't see any future.
	Lonely.
	Weeping.
	Very little interest in, or response to, environment.

TABLE II.—CONTINUED

Symptoms commonly found in states intermediate between primarily depressive and primarily anxiety states. May also be present in primarily depressive or primarily anxious states:	*Inhibition tends to be more dominant than facilitation and patient presents picture of inhibited anxiety state (cf. Table III, states intermediate between anxiety and excitement).* Can't concentrate so well. Can't make decisions easily. More sensitive to what people say as well as to noises and lights. Sense of humor not what it was. Patient complains he can't remember day to day events so well. Tires easily. Worried. Suicidal. Increased guilt feelings. Loss of confidence. Sleepless. Poor appetite. Agitated movements.
Primarily anxiety symptoms:	*Inhibition and facilitation are both increased but are present in more or less equal degree.* Restless, overactive. Movements are those of "curbed overactivity." Does not take much longer to do things. Walks at usual rate. Usual accessory movements replaced by accessory movements of agitation, *e.g.*, hand-rubbing, hand-mouth movements. Can't relax, tense. Chronically anxious. Anxiety may be attached successively to a considerable number of topics. Considerable interest and response to environment as source of possible concern or threat. Acute anxiety with feelings of losing one's mind or dying. Talks as much as, or more than, his usual. Talk is primarily upon his anxieties. Talk is as rapid as usual. Gastrointestinal, cardiovascular or skeletal muscular pattern of anxiety complaints (Cameron, 1944) with emphasis on gas, nausea and epigastric discomfort or tachycardia, precordial distress, and throbbing or pressure headaches, tremor, hyperreflexia, unsteadiness. Cold, wet extremities. Hands and feet go to sleep. Gastric movements increased, with increase in gastric acidity.

with conflict situations or with possible constitutional factors. We are not concerned in this discussion with the ways in which the individual protects his efficiency or recovers his efficiency by the age-old methods of atonement, repentance, undergoing punishment, by projection, by seeking security or by the procedures of psychotherapy or any other form of treatment.

It is true that it may be that methods of protection against the effects of this syndrome or ways of recovering from them can be worked out from these concepts which we are presenting. But these concepts can be considered by themselves. Their validity can be judged apart from all reference to etiology or to ways of protection and recovery. All we state is that at a certain level, if not at

other levels, these three phenomena appear to be related.

It has long been recognized that tension facilitates activity (Bills, 1927; Stauffacher, 1937; Jacobsen, 1938). It has also been recognized that high degrees of tension may inhibit activity (Triplett, 1898; Arnold, 1942). That these two components of tension exist has received at least tacit recognition for some time. When we become tense our performance with respect to what we have become tense about usually becomes facilitated, our reactivity to distracting and competing stimuli is inhibited. Explicit statements concerning this matter are few (Woodworth, 1940; Cameron, 1941, b). The possibility that these two components may vary in their relation to each other from time to time in the same individual apart from the total tensional level has received

TABLE III

ANXIETY AND MANIC EXCITEMENT SYMPTOMS

Primarily anxiety symptoms:	*Inhibition and facilitation are both increased but are present in more or less equal degree.*
	Restless, overactive. Movements are those of "curbed overactivity."
	Does not take much longer to do things.
	Walks at usual rate.
	Usual accessory movements replaced by accessory movements of agitation, *e.g.*, hand-rubbing, hand-mouth movements.
	Can't relax, tense.
	Chronically anxious.
	Anxiety may be attached successively to a considerable number of topics.
	Considerable interest and response to environment as source of possible concern or threat.
	Acute anxiety with feelings of losing one's mind or dying.
	Talks as much as, or more than, his usual.
	Talk is primarily upon his anxieties.
	Talk is as rapid as usual.
	Gastrointestinal, cardiovascular or skeletal muscular pattern of anxiety complaints (Cameron, 1944) with emphasis on gas, nausea and epigastric discomfort or tachycardia, precordial distress and throbbing or pressure headaches, tremor, hyperreflexia, unsteadiness.
	Cold, wet extremities.
	Hands and feet go to sleep.
	Gastric movements increased with increase in gastric acidity.
Symptoms commonly found in states intermediate between primarily anxiety and primarily manic states:	*Facilitation tends to be more dominant than inhibition, and patient tends to produce picture of facilitated anxiety state (cf. Table I, states intermediate between depression and anxiety).*
	For short periods in social situations, smiling vivacity may mask patient's anxiety.
	"Always have to be doing something."
	"Always in a hurry to get things done."
	Restless.
	Over-talkative.
	Talks about symptoms at great length but can discuss other matters.
	Feelings of tension, coldness and wetness of extremities.
	Increased sensitivity.
	Increased irritability and hostility.

TABLE III.—CONTINUED

Primarily excitement symptoms:	*Facilitation is in definite dominance. Inhibition is minimal.*
	General increase in activity.
	Increased talkativeness.
	Discursive, lacks goal idea.
	Increased friendliness, cheerfulness, joviality.
	Increase of confidence, brashness and lack of sensitivity.
	Temper outbursts, violence.
	Increased motor activity.
	Increased responsiveness to all events in the environment.
	Objectives of activity continually changing.
	Well practiced tasks may take longer because of continual changes in direction of activity.
	Accessory movements numerous and often emphasized and extreme.
	Movements pass frequently outside body silhouette.
	No "block" turning.

still less consideration. But it is upon this fact that there rest the relationships between excitement, depression and anxiety, with which we are concerned.

That they might vary in their relationship to each other in the same person with changes in the total tensional level is already known. Triplett (1898) has pointed out that as the tensional level rises inhibition tends to become more dominant. That facilitation and inhibition do vary in their relationships to each other from one animal to another has been shown by Pavlov (1928) who describes inhibitory and excitatory types of dog. But the concept that facilitation and inhibition might vary in their relationships to each other in the same person, not only in association with changes in total tensional level but also independently of that, has not hitherto been put forward.

The terms inhibition and facilitation, as used in this investigation, require definition since, unfortunately, both have several different connotations within the technical field apart from those which they are accorded in lay usage.

By *inhibition* we mean limitation in the amount and range and slowing down of behavior which exist despite otherwise general readiness and capacity for activity, as well as the individual's experience of this.

By *facilitation* we mean increased tendency to activity due to increased ease of performance in an individual whose capacity for activity is otherwise normal, as well as his experience of this.

The part played by inhibition in the depressive reactions has been investigated—the reaction time has been found to be prolonged (Franz, 1906; Wells and Kelly, 1922; Saunders and Isaac, 1929). Ocular movements have been reported as slowed (Diefendorf and Dodge, 1908). The speed of concept formation was also found to be slowed in depressive reactions (Stransky, 1935). The fluctuation of the ambiguous figure was found to be slow in depressed patients (Hunt and Guilford, 1933) and to vary with the degree of depression (Cameron, 1936). Neuman and Mather (1938) found that their depressed patients produced very little syntactic elaboration of speech and that their response to a topic was slow, short and limited to that topic. Wolf and Wolfe (1943) report on the basis of gastroscopic examination and direct observation of the stomach wall in an individual with a persistent gastric fistula that during states of dejection, depression and underactivity, movements of the stomach are greatly reduced or absent while in states of anxiety and hostility they are increased above normal.

The work upon facilitation has not shown such clear-cut results. Much of it has been carried out on manic patients and the results estimated upon the basis of the speed and amount of performance of one form of activity. Thus Franz (1906) examined the reaction time and Diefendorf and Dodge (1908) the speed of ocular movements in manics. Both investigators found a slowing

down. Likewise, Stransky (1935) found that the speed of concept formation was slowed in such patients and Hunt and Guilford (1933) made a similar report with respect to the fluctuation of the ambiguous figure. It was only when a much wider activity, *e.g.*, the use of language was studied (Neuman and Mather, 1938) that a difference was found between the speed and amount of test performance on the part of depressive and manic patients. The latter showed a high degree of syntactic elaboration with long discursive responses. It seems probable that the earlier investigators failed to find a difference between the manic and depressive patients since they did not grasp the fact so well described by Bleuler (1924) that the behavior of the manic patient is totally facilitated and that, therefore, the probability that he will show increased speed of performance continually in any limited and prescribed direction is small. Possibly in part because of this earlier confusion the concept of facilitation has not been nearly so widely used as that of inhibition.

The earlier workers (Féré, 1887; Moede, 1920; Allport, 1920) upon social facilitation —performance as affected by the presence of others—did not succed in distinguishing between facilitation and competition on the one hand and suggestion and identification on the other. Woodworth (1940) refers to facilitation as an aspect of set which is clearly much too narrow a definition since the individual who is facilitated in the sense used in this study shows a tendency for increased ease of performance of any kind. The definition given by Warren (1934) most closely approximates that which we have used, save for the lack of reference to the subjective experience accompanying facilitation—"increased ease of performance measured by decrease in time of accomplishing an act and decrease in tensions and irregularities in its performance or by increase in output."

In every day life facilitation is seen in the individual happy over success—the passing of an examination, an unexpected raise in pay, the "loosening up" of the theatre crowd recognized by the actor as taking place after the first few laughs (Lange, 1923), in states of fear, anger and hostility. It is seen in the more extreme forms in states of unusual excitement and particularly in manic reactions.

It is to be distinguished from the overactivity and over-reactivity described by Ferrier (1876), by Bianchi (1922) and Jacobsen (1936) as occurring in animals after frontal lobe damage and from the increased freedom of action following the use of such drugs as sodium amytal and alcohol. In both of these situations the increased activity is to be ascribed to disinhibition rather than to facilitation. Where the individual is actually facilitated in normal degree inhibition of secondary action tendencies is well maintained so that the primary activity can be carried out without interference. Where excitement is greatly increased, as in the manic states, there is both increased facilitation and a decrease in inhibition so that the overactivity of the individual is continually changing its objectives as secondary action tendencies displace the primary—the loss of the so-called "goal idea."

At this point it is of interest to note that at other levels this expression of activity in terms of facilitation and inhibition finds other and by no means identical exposition. At the neurophysiological level neural facilitation and inhibition have been established, while at the endocrine level excitatory and inhibitory forms of sympathin are recognized. Pavlov has used the term excitatory and inhibitory to describe lasting temperamental characteristics of his dogs, as well as to describe transitory states. It is probable that, despite the difficulties in effecting a satisfactory comparison due, among other things, to the impossibility of obtaining a subjective account, his use of these terms closely coincides with our use of the terms facilitation and inhibition in this investigation.

CONCLUSIONS

On the basis of our findings we consider that the manic excitements, the depressions and the anxiety states are related in terms of the degree of facilitation and inhibition which is present. In all three the total tensional level is raised but in the excitements facilitation is maximal and inhibition is greatly reduced, though still present. In the depres-

ions inhibition is present with facilitation greatly reduced. In the anxiety states there is an increase in both facilitation and inhibition, the two, as it were, competing against each other and being responsible for the characteristic picture of curbed overactivity.

On this basis it is possible to recognize a range of reactions—predominant facilitation (manic excitements), facilitated anxiety states, inhibitory anxiety states and predominantly inhibitory states (depressions).

The advantages inherent in this series of concepts which we have set up are first that they offer an explanation of the difficulty which initiated the investigations, namely that of differentiating between depressions and anxiety states. For it is clear that save where inhibition is outstandingly dominant and where facilitation is minimal some anxiety symptoms may be anticipated in the depressive reaction and similarly some depressive features are to be seen in all anxiety states, save where inhibition plays an entirely secondary rôle to facilitation.

Second they tend to break up the old pathological pictures of manic depressive and anxiety conditions and to restate them in terms of reactions which occur in everyday life so that it is possible to see these conditions essentially as constituting intensifications of activities normally present in the individual.

Third they afford some insight into the fact that the total reaction of the organism is most intense as demonstrated, for example, by the biochemical findings in the anxiety states where facilitation and inhibition are in sharp conflict as contrasted with the depressions and excitements where one or other has acquired dominance.

Fifth these concepts offer new vistas on possible therapies. In stating this it is necessary to bear in mind that a therapy to be successful does not necessarily have to deal with the primary cause but needs only to be capable of interrupting in a constructive manner an undesirable train of events (Cameron, 1944, a, b). Therapies of excitement, depression and anxiety, based upon the modification of inhibition and facilitation, have already acquired some measure of success. It would seem that continued inquiry into the development of more effective means of controlling these states would be fruitful.

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SELF-INDUCED PSYCHOSIS WITH HYPERTHYROIDISM COMPLICATING MANIC DEPRESSIVE PSYCHOSIS[1]

Experimental Human Hyperthyroidism

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Introduction

An unusual opportunity to observe the effects of prolonged heavy overdosage with thyroid was afforded recently. This was, in fact, experimental human hyperthyroidism and was also a most unusual method of attempted suicide. Temporary moderate overdosage with thyroid is not uncommon and is seen not infrequently by practitioners with patients attempting to reduce obesity. Usually, however, the patient rapidly decreases his overdosage when unpleasant physiologic symptoms appear.

The fate of excessive amounts of injected thyroid has been conjectured. Boothby and Plummer(1) state that an unknown but presumably small fraction of thyroxin when injected intravenously may be lost by elimination or may be destroyed before it is transformed into the active form. They deem this amount so small as not to require calculation experimentally. The effect of massive prolonged overdosage of thyroid and thyroid extracts is well known in animals(2, 4). However, the opportunities to observe such effects in man have been limited. There has been observed an occasional futile suicide attempt with a single large overdose, which produced only a slightly altered physiology. The present case resulted in marked changes in physiology, some probably permanent pathological changes in organs and a clinical picture consistent with psychosis due to thyrotoxicosis.

Case History

The patient, a physician 32 years of age, was admitted to the Los Angeles General Hospital in the spring of 1943 because of his mental depression. His wife stated that he had become depressed following the Pearl Harbor attack, that he could not apply himself to his duties and frequently secluded himself and wept for hours. He had, according to his wife, lost more than 50 pounds, was weak, had a rapid pulse rate and suffered from air hunger and severe cough. She stated that at times his temperature reached 104 degrees, and that marked edema of his lower extremities had developed. He did not eat properly and could not sleep without sedation. His wife believed that he did not realize he was seriously ill and said he continued to attempt to carry on his work.

On admission to the hospital the patient was obviously critically ill. He was extremely dyspneic, and was able to talk only with great difficulty. He thought he was physically ill but gave very little other information. Physical examination revealed marked general malnutrition, weight 97 pounds, whereas his former weight was about 150 pounds. He was very tremulous and excited. Blood pressure was 130/80, pulse 150, respirations 23 and shallow. There was slight exophthalmos bilaterally with lid lag, infrequent blinking and widening of the palpebral fissures; thyroid was not enlarged palpably. Basal inspiratory crepitant râles were heard in both lung fields; heart revealed generalized enlargement. There was a systolic murmur at the apex, soft and blowing in nature, not transmitted. There was marked distension of the superficial veins of the neck, which filled rapidly from above and did not empty rapidly when pressure was released. The abdomen was distended considerably with tympanitic note to percussion; liver was enlarged downward 3 fingers breadth below the right costal margin, and was markedly tender to pressure. There was slight dullness in both flanks suggestive of fluid, scrotum was edematous and enlarged to approximately 4 times normal size, and edema of both lower extremities extended as a generalized anasarca from the feet to the axillae, edema pitting in nature being present over the abdomen and chest wall. Axillary temperature was 97.6°.

Shortly after admission he became extremely restless and refused to remain in bed, walking about his room so that it became necessary to keep him in bed with restraint because of his extremely poor physical condition. During the formal mental examination it was difficult for him to talk because of his dyspnea. He was objectively and subjectively quite obviously depressed; however, he did not admit suicidal ideas and was non-productive. Attention, perception and comprehension were fair, he was correctly oriented in all spheres, memory was good, and general intelligence and knowledge seemed unimpaired. It was evident that he had

[1] Read at the annual meeting of the California Medical Association, Los Angeles, Calif., May 8, 1944.

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poor insight and that his judgment was defective. Neurological examination was essentially normal. Blood Wassermann and Kahn reactions were negative and urinalysis was normal.

Family History.—The patient's mother had had several depressions during which she had made suicide attempts, then died at 54 with heart disease. Between her depressions she was always somewhat overactive, sponsoring many clubs and having numerous social activities. A maternal uncle was committed to a mental hospital in England because of a severe depression. He had a history of several attacks of depression during which he also had made several suicide attempts.

Personal History.—The patient's birth was essentially normal. At the age of 8 he came under the influence of the Seventh Day Adventist Church. He attended school in England and came to the United States at the age of 20 to attend Adventist College and to study medicine. He finished pre-medical school, receiving a Bachelor of Arts Degree in 1932, then worked on a Master of Arts Degree in international law, finally graduating from medical school in 1939. After graduation he practiced privately until the time of his entry into the hospital.

The patient believed that his personality development was not normal due to the abnormal home conditions under which he had lived. His wife stated that his personality in his illness had undergone an entire change; the year previous he was quite sociably inclined and enjoyed his contacts with others. He had had numerous obsessions, such as having to lock a door five times, and had the obsession while he was interning that he had a lymphosarcoma. During his early childhood he stated that because of his religious training he would sit all day by the river studying the Bible. He believed this was definitely not of value and stated the other children all called him a Jew.

He was raised as an Adventist although he attended the Church of England for a time as a child. He is not religious now, tends to refute his earlier religious teachings, although unable to emancipate himself completely from them. He stated that now he derives little or no comfort from religion.

He was abstemious. Sleep had always been rather poor and his appetite had not been good recently. He had been impotent sexually for 2½ years prior to admission and before this had had an inactive sexual life.

Present Illness.—The patient stated his depressions began when he was in school in England at about the age of 15 or 16. He had perhaps 5 or 6 in all, each lasting from 3 to 6 months but never requiring hospital care. The depression which occurred just prior to the present one began about 2 years before admission and the patient believed it was precipitated by an examination he made of a 17 year old moron girl following which he developed the delusion that he had raped her. This depression lated about 3 months, after which he got along fairly well until about one year before his admission to the hospital when he began to develop thoughts concerning the futility of living. Without knowing why he would cry over his child. He lost his appetite and frequently failed to eat. He became retarded in his thoughts and his speech came with difficulty. At home he often would not talk at all but would just sit.

Shortly after the beginning of his depression he decided to commit suicide. He had thought of suicide three or four times previously during his other depressions but had never made an attempt. Although in many ways he had disavowed the teachings of his religion he knew that suicide was against the principles of his church and was afraid that if he did kill himself it would be a disgrace to the church. He therefore decided to try to do away with himself in such a way that no one would discover the method and he would be considered to have died from a disease process. He conceived the idea of killing himself slowly by taking massive overdoses of thyroid so that he would gradually simulate the disease hyperthyroidism. About one year prior to admission to hospital he began taking 10 2 gr. thyroid tablets three times daily. Gradually he increased this dosage, until he was taking approximately 80 grains per day, and continued this dosage about six months. He lost weight very rapidly, became extremely irritable and nervous and felt considerable pressure of activity although underneath it he remained depressed. He began having difficulty with his office practice, and was told by his associates that he was by his irritability and personality abnormality losing his practice as well as his wife. At this point the conviction that he must commit suicide became even more pronounced and he increased his thyroid dosage to 10 2 gr. tablets six times daily, a total of 120 grains daily, which he continued for another six months.[2] About three weeks after beginning this daily dosage of 120 grains he began to note swelling of his ankles, shortness of breath and general signs of cardiac decompensation. His edema increased until he could hardly get around and at this time his office associates had him placed in a general hospital under the care of an internist.

At this time his irritability increased markedly and his depression changed at times to abnormal gaiety with forced laughter. He became more excitable and developed the delusion that he was going to be taken into the Army even though he had been disqualified because of an old tuberculous lesion. He became somewhat suspicious and developed mild persecutory delusions and ideas of infidelity on the part of his wife. He also became markedly antisocial. Basal metabolic rate was plus 60, however it was believed that there was an error in this and it was rechecked the following morning. During the night he was able to secure four and one-half grains of sodium pentobarbital which he took several hours before the BMR determination, which turned out to be plus 4. While in the hospital he was unable to obtain his thyroid therefore he began to insist upon going home. Because he was too ill

[2] Thyroid taken was from Miller Laboratories, Los Angeles, California, and Pasadena Research Laboratories, Pasadena, California. This is U.S.P. standard .17 — .23 mg. I_2 and .19 — .21 respectively. It contains 0.2 percent iodine.

to do this and because of his generally uncooperative attitude his wife had him placed in the Psychopathic Hospital. There the numerous signs of hyperthyroidism and the characteristic psychiatric picture led to a diagnosis of psychosis due to Grave's disease. After a month's care he stated he wanted to live, that his spirits were good, and that he regretted his action which had resulted in doing himself so much physical harm. As his wife was a nurse and it was believed that he would have proper supervision in his home he was discharged and weekly visits to the out-patient department were arranged.

About one month following his release from hospital his wife stated that he was begininng to get a little upset again and that he got quite depressed on occasion. He was having episodes of crying, and was not cooperating with his treatment. At our request the patient was brought to the clinic where questioning soon revealed that he had again been taking thyroid tablets for about two weeks—20 grains three times daily. Examination again revealed an increase in the dyspnea, considerable increase in ankle edema and weight loss to 97 pounds. Although the patient assured us that he would cooperate with treatment and would refrain from taking the thyroid it was believed it would be dangerous for him to be without supervised care for a longer period. He was therefore committed to a state hospital. After treatment for 3 months he was discharged from that hospital as improved, with remission from his depression and some improvement physically.

Discussion

Upon first coming under observation this patient impressed us as suffering with psychosis with Grave's disease, the diagnosis being based upon the symptoms of irritability, rapid changes of mood, elation quickly alternating with depression, rapidity of speech and thought, marked excitability and vague persecutory delusions combined with fearfulness, plus the physical signs of marked hyperthyroidism. The underlying manic-depressive depression, unknown to us and masked by the symptoms due to thyrotoxicosis, did not become apparent until freedom from thyroid excess removed the toxic symptomatology. The underlying depression, which was essentially the same as the repeated depressions suffered over many years, with dearth of ideas, retardation and decreased psychomotor activity then appeared in its true light. There was absence of irritability with rapid changes of mood. No elation appeared and the fearfulness and persecutory delusions disappeared. We conclude then that this tremendous thyroid overdosage was sufficient to produce not only the physical signs of severe Grave's disease, but also the psychotic picture occasionally seen in that disorder.

Reports of massive thyroid overdosage in human subjects have not been found in the literature. References to moderate physiologic symptoms resulting from overdosage in patients' self-medication to reduce obesity are concerned with relatively small doses (up to 5 grains daily). In this case it is concluded that the excessive dosage was not destroyed in the body or excreted physiologically inert. This seems apparent from the change in symptoms from the dosage of 80 grains per day taken for 6 months to the dosage of 120 grains per day taken for another 6 months. With the increased dosage came the onset of cardiac decompensation and the mental symptoms referred to, particularly fearfulness, persecutory delusions and rapid mood changes. These disappeared within a few weeks after the removal of the toxic dosage. It is of interest that during the period of hospitalization for his psychosis an internist called in consultation made an independent diagnosis of psychosis with Grave's disease.

Summary

A patient suffering with manic-depressive psychosis, depressed type, the diagnosis being based upon the history of repeated cyclothymic depressions with typical symptomatology and complete recoveries with remissions free from symptoms, attempted during a depression to commit suicide so that it would be unrecognized as such. Massive, prolonged thyroid overdosage extending over a period of 1½ years resulted in a clinical picture of hyperthyroidism indistinguishable from typical Grave's disease. A marked increase in the overdosage resulted in the clinical picture of psychosis with hyperthyroidism. Removal of the drug resulted in the remission of symptoms due to thyroid toxicity, the clinical picture of a retarded depression remaining. Recovery from the depression followed a period of several months' hospitalization under psychiatric régime. During the acute toxicity the superimposed psychosis sufficiently masked the depression that it was not detected. This unusual method of attempted suicide provided opportunity to study the physiologic

effects of massive, prolonged thyroid overdosage—a case of experimental human hyperthyroidism.

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THE AUTOKINETIC TEST: ITS VALUE IN PSYCHIATRIC DIAGNOSIS AND PROGNOSIS

Preliminary Report

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The phenomenon of the visual self-movement of light has been for many years a little-known curiosity of the experimental psychologist. It consists of an optical illusion wherein a susceptible individual, placed in a blacked-out room and directed to gaze steadily at a fixed pinpoint of light, appears to see this light move about. Voth(1) made use of this phenomenon of visual light autokinesis when he devised, some years ago, his ingenious introversion-extroversion test. He has done much careful investigation, the results of which are but little known. Indeed, few psychologists and fewer psychiatrists have even heard of the autokinetic test.

In general, individuals of introvert personality see considerable autokinetic movement, whereas the extroverts see little or none. The individual extent and pattern of movement appears to be fixed and constant, subject only to certain influences which will be discussed later. The author has conducted more than five hundred tests on both state hospital patients and so-called normal individuals, the findings of which completely corroborate those of Voth. We have undertaken the present investigation for the purpose of evaluating the autokinetic test's usefulness as an adjunct in the diagnosis and prognosis of psychiatric patients, particularly schizophrenics.

The Method

Voth's technic, with certain modifications which will be mentioned, has been used. The subject is seated at a table in a blacked-out room. It is of primary importance that the room be utterly dark, for which purpose we have made use of the X-ray developing room. There should be quiet and good ventilation. Ten feet distant from the patient and five feet from the floor is placed a 10-watt electric lamp shrouded with heavy black paper. The ordinary wrapper for unexposed X-ray film serves the purpose admirably. A small pin prick is made in the paper, just enough to emit a single, tiny ray of light. Upon the table is fixed, by means of thumb tacks, a circular sheet of paper 60 cms. (24 in.) in diameter. The subject holds a pencil with its point at the center of the sheet. An electric interval timer is used for the test, set at ten minutes.

The patient is given as little instruction as possible, consistent with clarity, and any form of unnecessary suggestion is carefully avoided. He is told to move the pencil as he sees the light move, in the same direction and for approximately the same distance, thus making a chart or graph on the paper of the path the light appears to travel. He is asked to make a dot whenever the light appears to make an appreciable pause or stop. Should he see so much movement that his pencil runs off the paper he should lift the point, return as near the center as he can guess and start over. He is then left alone in the room during the performance of the test. Most patients, even those who are somewhat disturbed, give surprisingly good cooperation; very few have exhibited any fear of being left alone in the dark.

Interpretation

The graph of autokinetic movement having been taken, it is necessary to grade and classify the result. This Voth does by the following formula, the result of which is called the autokinetic index:

$$\sqrt{\frac{L \times DC \times ME}{(S+1)}} = \text{Index}$$

L equals total length of tracing.
DC equals distance from center.
ME equals maximum expanse of graph.
S equals number of stops.

All measurements to be taken in centimeters.

This formula, it will be seen, takes into consideration the ratio between the total amount and extent of movement and the

[1] From the Columbus State Hospital.

number of stops. To the author this seems somewhat cumbersome and scarcely necessary. For all practical purposes of interpretation—since the primary interest lies in the quantity of movement seen—we prefer to classify graphs as follows:

Negative equals zero movement.
1 plus equals small amount.
2 plus equals moderate amount.
3 plus equals large amount.
4 plus equals maximum amount.

In order to facilitate the estimation of the amount of movement by the latter method we have been in the habit of drawing circles

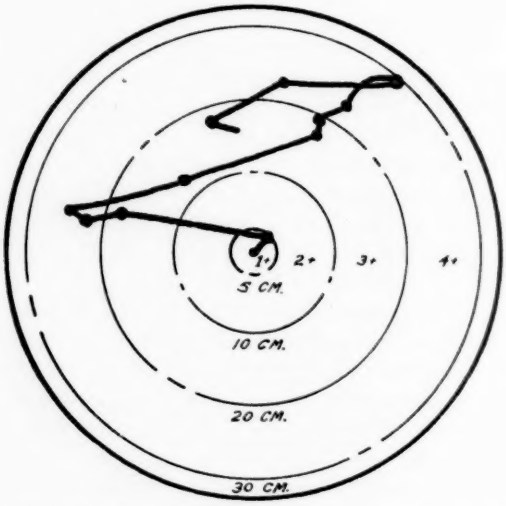

FIG. 1.—Autokinetic graph (reduced) of typical case of schizophrenia, catatonic. 4 plus movement. This represents the usual pattern seen in cases of marked introversion.

on the graph with radii of 5, 10, 20 and 30 cm., thus dividing the entire expanse into zoning circles labeled 1, 2, 3 and 4 plus from within outward. These zones have been noted on Figs. 1-3.

It has already been shown by Voth's voluminous studies and corroborated by our own, that the autokinetic test offers a simple, objective and accurate means of determining introversion-extroversion. In our opinion it is much superior to the usual question-answer procedure used by psychologists, less subject to error and less time consuming.

From the psychiatric standpoint the introversion-extroversion character of the test is maintained and further substantiated by results on state hospital patients. Within the limits of the patient's cooperation the amount of autokinetic movement he sees appears to

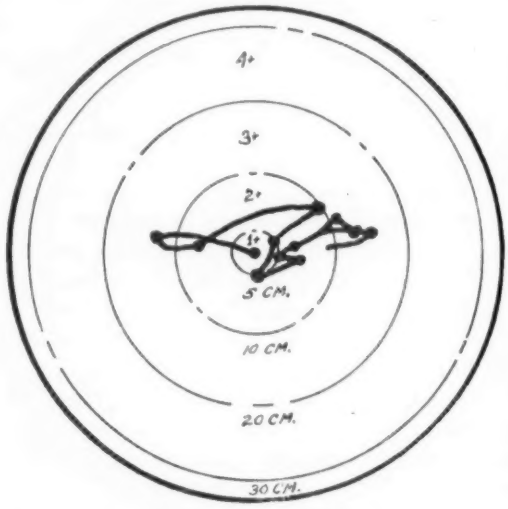

FIG. 2.—Autokinetic graph of same case as Figure 1 following 12 semi-weekly electric shock treatments. Note the marked reduction (2 plus) of movement with retention of similar pattern. Marked clinical improvement has been maintained.

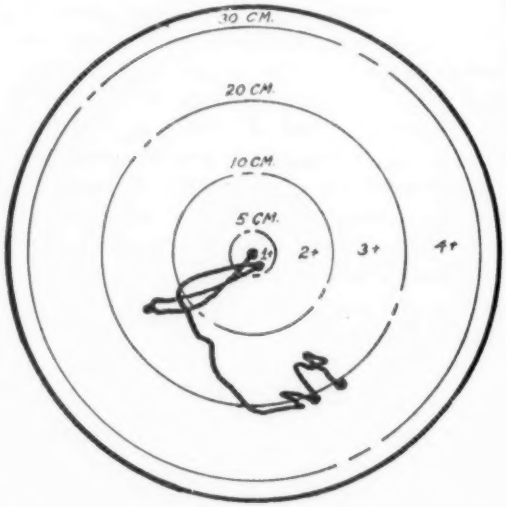

FIG. 3.—Autokinetic graph of case of schizophrenia, catatonic, which did not improve clinically following courses of insulin therapy and electric shock. 3 plus movement remained unchanged by both forms of treatment.

be in direct proportion to his withdrawal from reality. Thus, in the schizophrenic group, the catatonics are prone to see a maximum amount of light movement, the hebe-

phrenics somewhat less and the paranoids least. The last mentioned group, indeed, does not at all follow the usual schizophrenic pattern, just as it does not follow the pattern in other psychometric tests. Voth(2) has noted this and we are in complete agreement with him. Those patients forming the affective group, on the other hand, record little or no movement. If a patient sees no movement today he will see none next week or next year; if he sees 4 plus movement today he will likewise do so at any given future date. The general pattern of the movement, too, remains essentially the same during repeated tests at either long or short intervals.

The Theory

"Uncanny" is the adjective most frequently used by individuals subjecting themselves for the first time to the autokinetic test, providing they happen to see considerable movement. This movement may be great or small in expanse, slow or rapid in speed, steady or interrupted in progress. If susceptible, one sees the light move whether standing, sitting or reclining, and just as readily with either eye closed. Many persons see far too much apparent movement to be explained on a basis of ocular muscle imbalance or of slight head movement. Individuals with serious defect of muscle balance may see no movement at all; conversely, persons with 20/20 vision and perfect muscle balance may have a 4 plus index. The phenomenon is not explainable on any basis of optical physiology known to us.

For a reasonable theory to account for visual light autokinesis it seems necessary to go back to one of the principal and primitive needs of the psyche. This is the need for constant awareness of one's orientation in space for the fundamental purposes of procurement of food, detection of the presence of enemies and so forth. In a room completely dark the individual loses the landmarks to which he habitually and unconsciously refers in order to preserve and maintain his orientation in space. Here he has but one point of orientation although at least three such points are requisite for his proper and customary localization. Thus there may be a tendency to extend or multiply his single point of reference as an orientation device. Doubtless this psychic need is more potent and demanding in some organisms than in others; hence these will appear to see the light more freely in their sustained effort at orientation, prolonged throughout the entire test period. Our conception of the autokinetic phenomenon, then, is that it is of psychogenic origin and constitutes an unconscious effort of the organism to preserve and maintain its spatial orientation.

Clinical Application

Autokinetic tests were performed on 50 state hospital patients whose psychoses were of fairly recent origin, who were sufficiently cooperative to give reliable tests and who had been diagnosed schizophrenia by unanimous vote of our hospital staff. Age limits of the group were 16 and 44. There were 21 males and 29 females. Of the group 20 were diagnosed hebephrenic, 18 catatonic, 8 paranoid, 2 simple and 2 mixed types. Forty-one of the 50 had autokinetic indices of 3 and 4 plus, 6 had 2 plus, 2 had 1 plus and 1 had zero. The 38 patients comprising the hebephrenic and catatonic groups returned 36 of the 3 plus and 4 plus indices. The paranoid group showed the greatest variation of the series; 5 of the 8 paranoids had 2 plus indices, 1 had 3 plus and 2 had 1 plus. This is not surprising when one considers that their symptoms are frequently atypical when compared with other schizophrenics; also that in other tests, notably the Rorschach, such cases fail to conform to the usual schizophrenic patterns. The case showing zero movement was originally diagnosed acute catatonic excitement. She made a rapid, spontaneous recovery and her case was subsequently reviewed by the staff and the diagnosis changed to manic-depressive psychosis, manic type.

Mention was made earlier that repeated observations show little variation in the extent and character of the autokinetic tests taken on the same individual. This is not strictly true. Seventeen of our cases in the hebephrenic-catatonic groups, all of whom had shown 3 plus and 4 plus autokinetic indices, were again tested following courses of electric shock therapy, each having had a minimum of ten grand mal reactions at semi-

weekly intervals. All but 2 of these cases showed some degree of clinical improvement. The repeat tests on these 2 showed no essential alteration in either the extent or pattern of the autokinetic graph. The 15 improved cases, on the contrary, showed appreciable reduction in the amount of movement in contrast with the tests taken prior to treatment. In 4 cases the reduction was from 4 plus to 2 plus and in 8 from 3 plus to 2 plus. In Figures I and II may be seen a typical case of this group; the reduction in the amount of autokinetic movement observed by this patient following treatment is at once apparent.

If these findings are corroborated by further observations on a larger series of cases and by other investigators it would appear that the autokinetic test is likely to provide a valuable adjunct to psychiatric diagnosis and prognosis. Further studies along these lines have been planned and are being carried out.

An interesting sidelight worthy of mention is that 7 cases of our series were given Rorschach tests at about the same time as the autokinetic tests. In each case there was essential agreement. Cases that showed prominence of the M factor in the Rorschach, as might be expected, showed maximum autokinetic movement.

The results of the autokinetic test in such a small series of cases, we realize, are far from conclusive and may well be subject to skeptical criticism. It is believed, however, that a most fruitful field of investigation beckons. If this simple, objective and easily demonstrable test fulfills, even in small part, its initial promise, it will provide a most valuable addition to the armamentarium of the clinical psychiatrist. We can think of innumerable adaptations of the test. For example, we wish to know and will endeavor to find out what influence drugs have on the autokinetic pattern; the probable reduction of movement to be expected in paretics following malaria or artificial fever therapy; the reactions of the various types of psychoneurotics; the use of multiple or mass tests, as with students or army personnel; in children, the relation of the phenomenon to behavior problems, stammering, chorea and so forth. These are only a few of the potentialities of the autokinetic test to tempt our further investigation.

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A NOTE ON APOMORPHINE AS A SEDATIVE[1]

1ST LT. FRED FELDMAN, M.C., A.U.S., SAMUEL SUSSELMAN, M.D., AND S. EUGENE BARRERA, M.D.

It is the purpose of this paper to call attention to a drug, apomorphine, which has proved itself of noteworthy value in the care of disturbed psychiatric patients, but whose usefulness seems insufficiently recognized. Apomorphine, either alone or in conjunction with scopolamine, has been used as a sedative for several hundred patients on our psychiatric wards over the course of about five years, successfully almost without exception.

The standard textbooks of pharmacology either omit or only briefly mention the use of apomorphine as an hypnotic. Goodman and Gilman write that "the use of apomorphine is practically restricted to the production of vomiting." Sollman speaks chiefly of the emetic and excitant effects of the drug, but notes briefly that "smaller doses produce prompt hypnotic effects under certain conditions." Cushny mentions its sedative effects in small doses in conditions such as insomnia, and points out that depression and sleep occasionally follow vomiting when the drug is used in standard dosages for emesis.

There is an equal meagerness of reports in the English literature concerning the indications for, and the efficacy of, apomorphine. As long ago as 1899 Douglas made use of the drug in alcoholism and "other mental ailments," reporting his results briefly in 1917. Coleman and Polk in 1902 found apomorphine valuable in the treatment of a large series of acute alcoholics, and Rosebrugh in 1908 obtained similar results.

We recognize that the drug is undoubtedly utilized in many medical centers throughout the country, and that there has long been awareness of its value. We have so often been asked the reason for our prescribing it, however, that a note to emphasize its usefulness seems warranted. Use of apomorphine was first encouraged in the Albany Hospital by our anesthesia department, especially Dr. F. A. D. Alexander, who employed it in pre- and post-anesthetic sedation. It was further observed to induce effective and rapid sedation in violent schizophrenic patients, and during the past half-decade its use has spread to all categories of disturbed mentally ill patients.

Pharmacology

Apomorphine is an artificial alkaloid, produced by dehydrating morphine through the action of mineral acids. Its salient action has usually been considered to be that of emesis by direct influence on the central vomiting center. Textbooks of pharmacology have stressed the fact that the peculiar narcotic effect of morphine sulfate is almost completely lost, and that an excitant effect takes its place. Large doses may indeed cause excitement, convulsions and death by asphyxia, especially in animals which do not react by vomiting.

The hydrochloride is the official U.S.P. salt available, consisting of white crystals which acquire a greenish tint on exposure to light or air. It is soluble in water to the extent of one part in 50.

Dosage

Apomorphine may be used alone in the dosage of gr. 1/40, or together with scopolamine gr. 1/100 or gr. 1/150. It is our custom to order the drugs combined, but in cases of idiosyncratic response to scopolamine, in the form of excitement, the apomorphine alone is effective. In the dosages noted, we have found it safe to repeat administration of the hypodermic within one-half hour, and have given as many as eight hypodermics over an eight-hour period when necessary for control of excitement. The effect of the medication is usually noted within five minutes, but may be delayed as long as 15 minutes. Some patients become drowsy rapidly, ask to lie down, and sleep

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for a period ranging from one-half to two or more hours. Others manifest only a quieting influence, and cease their overactivity for an interval of about the same duration. The rare patient whose disturbed state is not mitigated within one-half hour should be given a second hypodermic, and will respond by sleep or rest.

An occasional patient will complain of nausea within a few minutes after administration of the apomorphine and scopolamine, and perhaps 2% or 3% of patients will vomit. In almost every case, however, the nausea and vomiting will be followed by amelioration of the excitement, noisiness and overactivity.

Indications

The drugs have been used in both functional and organic psychoses. Schizophrenic excitement has been subdued readily in scores of patients, and manic overactivity is easily controlled. The agitation characteristic of some involutional depressions responds well, and the panic states of acute anxiety will yield, although this latter condition is more satisfactorily combatted by intravenous sodium amytal. Paranoid patients with episodes of excitement have been controlled.

The organic psychoses respond equally well. The agitation of delirium tremens subsides usually with one hypodermic, and the excited reactions to visual hallucinations displayed in bromism may be abated. The violent disturbed states of some seniles and general paretics are readily relieved. Other toxic psychoses have been treated—including post-operative and post-partum excitement, the crises of acute hyperthyroidism, and idiosyncratic reactions (in the form of confusion) to the barbiturates.

Other organic states requiring sedation have proved susceptible to apomorphine and scopolamine. The restlessness and confusion of patients with brain tumors, cerebrovascular accidents, subarachnoid hemorrhages, Friedrich's ataxia, meningitis, uremia and severe fractures have been controlled. Moreover, the ceaseless activity of Sydenham's chorea has been lessened significantly by the usual dosages of the drugs.

The agitation of a definite proportion of patients during recovery from electro shock treatment may be quickly counteracted by a hypodermic when the patient's overactivity makes intravenous injection of barbiturates difficult. The period of recovery from insulin coma may be marked by restlessness and disturbance which apomorphine combats. This disturbance may become extreme in the case of prolonged coma, where sometimes as many as six nurses may be needed to control the incessant agitation, which may persist for hours if sedation is not given. We have used apomorphine and scopolamine satisfactorily in this complication of insulin therapy.

Status epilepticus is best controlled by intravenous barbiturates, but the excitement of the so-called epileptic equivalents may yield to apomorphine and scopolamine. Post-traumatic excitement has been readily controlled.

Contraindications

The contra-indications to the use of these drugs include, cardinally, respiratory depression, such as is found in patients who have attempted suicide by barbiturate ingestion, and whose medullary depression is accompanied by agitation. Age is not to be considered an obstacle, since we have given the drugs to children of 13 and to seniles as old as 90.

Complications

The complications include the rare case which does not respond by sleep, but which may, on the other hand, show augmented excitement. This reaction seems to be due to the scopolamine, which should therefore be omitted from subsequent hypodermics. A second complication is nausea and vomiting, which are not severe, and which are followed by the usual abatement of excitement. We have not observed the complication of a too deep depression from a single hypodermic, or from repeated administration within one-half hour when indicated. It has in no case been necessary to use analeptics to counteract depression—such as is occasionally required when intravenous barbiturates are used for sedation. The danger of using an old solution of apomorphine has been mentioned in one case in the German literature (Seuffer 1921). The solution in this case

was several weeks old, whereas it is our procedure to make up each dose of the drug fresh.

SUMMARY

This note stresses the value of apomorphine as a sedative in the agitation and excitement accompanying certain psychiatric illnesses. The dosages, indications, contraindications and complications are discussed.

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DIAGNOSIS AND CLASSIFICATION: A DISTINCTION

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Current mental hospital practice in regard to diagnosis and classification differs in an important respect from that of general hospitals, and it is the object of this paper to call attention to the difference and to report an instance in which it assumed some legal importance.

The question at issue is whether a patient with two or more diseases should be placed in just one diagnostic category. In most mental hospitals such a patient is given only one diagnosis; in general hospitals he is given as many as he has diseases. For example, a man with pneumonia and pneumococcic meningitis is given two diagnoses, not just one. If his case were indexed merely under pneumonia, someone looking through the hospital files for cases of meningitis would fail to pick his case up. The logic of this procedure is invincible, yet mental hospitals, speaking generally, have failed to heed it.

A convenient and common example is the case of a woman who, because of a psychoneurosis, takes large amounts of bromide and is admitted to a mental hospital in a bromide delirium. At hospital staff meetings it has been observed over and over again in such cases that while everyone agreed the the patient had a bromide delirium, it was debated whether officially to label the case as psychoneurosis rather than drug psychosis, on the ground that it was a psychoneurosis that caused her to take bromide and thereby to become psychotic. Indeed, this attitude is supported by the "Statistical Manual for the Use of Hospitals for Mental Diseases," sponsored by the Committee on Statistics of The American Psychiatric Association, which says, in remarks on drug psychoses: "Cases developing a toxic reaction from the use of drugs in the treatment of another form of psychosis should be reported according to the primary psychosis and not as drug psychoses."[1] But this is like saying that if a man taking amidopyrine for toothache developes agranulocytic angina, his case should be recorded simply as toothache.

The logical thing to say is that the patient has two conditions, a psychoneurosis and a superimposed bromide delirium. Why is this not done? Perhaps it is because hospital statisticians seem to want the total in the annual tabulation of diagnoses to tally with the number of admissions (as if ten patients could not have twenty or thirty diseases). As a result, most statistics give an incomplete picture and are useless for certain types of study. Thus an investigator looking through annual hospital reports to ascertain the frequency of drug psychoses would be wasting his time, for some or all of the cases he would be looking for might be hidden under the label of psychoneurosis, or manic-depressive psychosis, or whatever it was that prompted the medication.

The Federal Trade Commission is proceeding against the manufacturers of patent medicines containing bromide for not warning the public adequately of the dangers of this drug. At hearings now in progress it appears to be the aim of attorneys for the manufacturers to minimize the frequency of bromide psychoses. Hospital case records having been introduced in evidence (with due regard for the anonymity of the patients, of course), the attorneys have in some instances made capital of the fact that the minutes of staff meetings seem to reveal a disagreement of doctors, since some physicians are recorded as having expressed the opinion that the diagnosis is psychoneuro-

[1] Statistical manual for the use of hospitals for mental diseases. National Committee for Mental Hygiene, New York City. Tenth edition, 1942, p. 29.

sis. With not a little disingenuousness the claim is made that such an opinion must be construed to mean that the physicians in question believed the patient had a psychoneurosis *and nothing else*. Thus an illusory difference of opinion—illusory because a staff physician might fully agree that the patient had a bromide delirium yet might label the case otherwise in compliance with the instructions in the Statistical Manual—plays into the hands of those who have reason to obscure the issue.

That the instructions in the Manual can contribute to such a result is no reflection on its sponsors, the Committee on Statistics. No committee formulating a classification of anything can foresee every possibility of mishap, even when its policies are followed in good faith. But the situation calls for remedy, and the following suggestion is therefore made.

Staff physicians may with perfect propriety draw a distinction between *diagnosis* and *classification*. Under the former one may enumerate *all* the disorders which the patient has, however great their number. Under the latter one may designate that disorder which seems most suitable for the purpose of the annual statistics. As an example, a physician might offer the following opinion: "As to *diagnosis,* I think the patient has three conditions. First, she has borderline mental deficiency, as shown by the fact that she did not do well in school and has shown other evidence of inferior mentality. Second, she has a psychoneurosis of the neurasthenic type; there is a history of undue fatigue and of somatic symptoms of a functional nature for several years. Third, she has a bromide delirium, which, as the history shows, began ten days before admission and about two months after she had started to take bromide. As to *classification,* I think it would be best to place her in the category of 'psychoses due to a drug or other exogenous poison (bromide delirium).'"

Opinions expressed in this manner do justice to the plural character of many sicknesses. Moreover, the adoption of a point of view deeply ingrained in all other branches of medicine could not fail to be of advantage to psychiatry.

DISCUSSION OF DR. BASSOE'S ARTICLE, "SPAIN AS THE CRADLE OF PSYCHIATRY"[1]

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In this most interesting, scholarly essay,[1] Dr. Bassoe has come to a convincing conclusion concerning the claim expressed by several authors that Spain and not France should be considered the cradle of modern psychiatry. By a critical study of historical sources, he has confirmed the fact that the humanization of the treatment of psychotics started earlier in Spain than in other European countries, and Pinel, by removing the chains from the insane, only repeated what more than 300 years before has been accomplished in Spain. On the other hand, together with other cultural achievements of Spain, this progressive attitude towards the mentally sick as well as some valid descriptions of psychotic conditions, became lost for the rest of Europe, and only after their rediscovery in other countries did they exert an influence upon the development of psychiatric thought. A glance upon the general contours of European history furnishes the answer to the question as to why early attainments of Spanish culture did not further develop in Spain itself and could exert influence upon the shaping of European destiny only after they were transplanted to other countries.

From the 11th century until the death of Philip II, Spain was one of the focal points of European development. During these centuries, she was the standard bearer of Christianity against Mohammedan expansion. With the victory of Lepanto, Philip II conclusively sealed the destiny of Islam in western Europe. At the same time, Spain became the moving spirit of the counter-reformation. In its fanatical defense, she became the leading European power and the militant church in combining feudal romantic chivalry with fanatic Catholic devotion, became a gradiose historical force.

Spain in the 16th century was the most powerful remaining citadel of mediæval Catholicism in Europe and gave to its spirit in the persons of Loyola, Philip II, Saint Therese, El Greco and Cervantes everlasting expression. In the counter-reformation, led by Spain, mediævalism made a last and tragic dying effort to stem the tide of the new era. Eventually, the spirit of romantic chivalry, mysticism, faith and passionate devotion had to yield to the victorious onslaught of modern rationalism. The spectacular rise and rapid downfall of Spanish hegemony over Europe belong to the most dramatic periods of history. Spain owes much of her greatness but also her downfall to her leadership in the counter-reformation. Her economic, political and spiritual disintegration began already under Philip II's reign and reached rapid completion under his two successors.

Historians of the 19th century often speak of the isolation of Spain within Europe. Ullersperger—one of Dr. Bassoe's sources quotes a French historian saying that "Spain is the least known of all countries of Europe; some islands of Oceania are better and more completed explored."[2] These historians obviously refer to Spain after the 17th century. *Sic transit gloria mundi!* Spain which in the 16th century made such a deep imprint upon European customs, social forms, dressing, and also spiritual outlook, soon became the forgotten man of Europe together with many of her cultural contributions. Early achievements in psychiatric practice and knowledge are only one of the many treasures buried under the ruins of modern Spain.

Spain's tragedy was that at the dawn of the modern era, unlike England, she failed to ride the "wave of the future." As a result, the first country to benefit from colonial expansion—which itself was the fruit of the adventurous awakening spirit of the Renaissance—she was also the first of the new national states to lose her influence in the

[1] Delivered before The Illinois Psychiatric Society on March 1, 1945.

[2] Am. J. Psychiat. 101:

[2] Translated by the author.

European concert of powers. The hidalgo with his adventurous inclinations was possibly an able conqueror, but with his anachronistic ideology, he was certainly not as well prepared to become a successful colonizer as the Dutch or British trader. The genius of Spain was not in this field. Cervantes, himself, on the basis of his pitiful record as a public administrator was unable to obtain a governmental job in the Spanish colonies and thus was forced to continue his unsuccessful efforts to earn his living from writing. While Spain's early psychiatric achievements, in the technical sense, were lost, to be excavated 500 years later as curiosities by modern medical historians, Cervantes' contribution to the knowledge of man's nature survived in a most dynamic fashion. Don Quixote's singular appeal to the young and old of all nations through 300 years has been the topic of innumerable publications, only equaled by those about Hamlet, sharing with the latter the first place as the most profound portrayal of the universal conflicts of man. A short discussion cannot do justice to this masterpiece, the first psychological novel of literature, but I should like to call attention to a few outstanding points.

It is customary to consider the story of Don Quixote as a masterful parody of contemporary Spanish society, particularly of the deterioriating hidalgo, the exponent of the small nobility who no longer had a place in changing society and lived a shadow existence on the memories of past glory. Cervantes' father, Rodriquez, was a typical case, constantly fighting against his creditors by insisting upon the privilege of a hidalgo, not to be jailed for failing to pay his debts. Cervantes, himself, fought against the Mohammedans in the service of the king and lost the use of his left hand from wounds received in the battle of Lepanto. In literary criticism, just as in every other field, there are the so-called "realists" who can see only the obvious and are insensitive to those overtones which make the difference between ordinary literary production and a masterpiece. It is, of course, obvious that Don Quixote's tragicomedy is the symbolization of the dying Spanish culture in the 16th century. The perceptive eyes of the great writer foresaw in a sense the fate of a nation which like its grandiose exponent, Don Quixote de la Mancha, turned his face towards the past and in vain tried to keep alive the feudal ideology of romantic chivalry and militant religion which no matter how noble and inspiring, were doomed and had to yield their place to the new realistic orientation. However, the story of Don Quixote is more than contemporary satire. It is no secret with whom Cervantes' heart is; all his sympathy is with Don Quixote, the foolish knight, who in spite of all his insanity, becomes the martyr of his idealism and the symbol of the higher strivings of man, while reason is represented by the faithful but so utterly banal Sancho Panza. However, reason survives and Don Quixote dies and we all feel sad and poorer after his departure. This universal effect upon all readers shows that the tragedy of Don Quixote is not merely the local, time and space bound, tragedy of Spain, but that of all man. Turning away from frustrating and drab reality by regressing to the colorful imagery of the past is a fundamental psychodynamic principle. This regressive trend in different degrees is present in every healthy or sick person. Psychotic symptoms do not follow psychological principles different from normal processes. There is no special physiology for healthy or pathological processes of the body, and similarly there are no two kinds of psychology, one valid for the healthy, one for the neurotic and psychotic mind. The basic principles are the same in psychology and psychopathology. It is no accident that a Spaniard of the 16th century was the first to make the escape from the unbearable present into imagery of the past the central theme of a novel, and to understand the paramount significance of regression in psychosis. Shakespeare and Cervantes died in the same year. Both anticipated science by 300 years in bringing nearer to our understanding the baffling irrationality of the disturbed mind. Shakespeare succeeded in awaking our compassion for the compulsive doubter whose scruples and indecision provoke in the ordinary man—and even in the physician—nothing but impatience and irritation. Cervantes' achievement from the psychiatric point of view is even

greater; he succeeded in awaking our sympathy and empathy for the raving paranoiac by his instinctive understanding of his psychosis as a regressive retreat from reality into phantasy. For the psychiatrist, it is of special interest to note that Don Quixote and Sancho Panza are like Don Juan and Leporello, complementary figures, personifying the two aspects of one and the same person. Most psychotics, apart from their autistic attitude retain a certain amount of practical sense, which enables them to move around in the world. They live a double existence, retaining a tenuous practical relationship to the world, overshadowed by the self-created world of phantasy. Sancho Panza is the personification of the subordinated reason, helping his master by taking care of his practical needs, to live by his folly. Only together, in their fascinating symbiosis, do Don Quixote and Sancho Panza—really one person—give a faithful picture of the paranoiac.

In a sense psychosis and psychoneurosis are the most human of all diseases. Every animal can have stomach or heart trouble but only in extremely rudimentary form, a neurosis or psychosis. *Phantasy*, the faculty of imagining, is the basis of thinking which enables man to master his environment better than any other living organism. In psychosis this faculty is abused, not for mastering but for escaping from the reality which has overpowered the mentally sick. Perhaps this is the main but hidden reason why we cannot forgive the psychotic. Because he abuses the most distinctive faculty of man, we have stigmatized him for centuries. Cervantes made a good case, in fact, the best possible case for the psychotic demonstrating so effectively the extenuating circumstances in his favor. The ideals and principles of Don Quixote were lofty indeed, and, in a way, we cannot help admiring his tenacity in trying to live up to them. We regret that life does not allow him to live the exemplary life of a knight errant. It is difficult to laugh at and despise him—the most we can say is that he was not for this world—he was too good for it. Is this not true also for many of our patients? Understanding the psychotic is the way of overcoming the stigma of mental disease. Perhaps it is not a coincidence that Spain, the first country to remove the chains from the psychotic produced the man who was the first to understand him.

AWARDS AND CITATIONS

Following is a list of awards and citations received by neuropsychiatrists in the Army of the United States during World War II. It indicates the excellent work of these medical officers and the significant part played by psychiatry in war medicine.

This list is considered incomplete. It will be appreciated if neuropsychiatrists not mentioned herein who have received citations or awards will report the same to the Division of Neuropsychiatry, Surgeon General's Office, Washington, D.C.

1. COLONEL LLOYD J. THOMPSON, Medical Corps, United States Army, Office of the Chief Surgeon, European Theater of Operations. THE LEGION OF MERIT. "For exceptionally meritorious conduct in the performance of outstanding service as Senior Consultant in Psychiatry, Office of the Chief Surgeon, European Theater of Operations, from 5 August 1942 to 24 May 1945. Colonel Thompson consolidated the experiences of the British and Canadian Armies, together with that of the American Forces in the Mediterranean Theater, and from this foundation built a superior Neuropsychiatric Service. Under his close supervision, hospitals for the care of neuropsychiatric casualties were developed in the United Kingdom and on the European continent. With due consideration for the prevention of neuropsychiatric casualties under combat conditions, he organized instruction for divisional medical officers and psychiatrists and guided the indoctrination of line officers of the First United States Army in the recognition of the early signs of combat exhaustion and its prevention. Entered military service from Connecticut."

2. LIEUTENANT COLONEL R. ROBERT COHEN, Medical Corps, United States Army. LEGION OF MERIT. "For exceptionally meritorious conduct in the performance of outstanding services from May 1943 to August 1944 at the Army Service Forces Training Center (Ordnance), Aberdeen Proving Ground, Maryland. During that period Lieutenant Colonel Cohen by his untiring efforts, initiative and superior intelligence developed a unique and original training program in the field of psychiatry to speed up the mental and emotional transition of enlisted men from civilians into soldiers. The program he evolved and put into operation in all the Ordnance Training Centers was done entirely outside normal duty functions, and has resulted in better morale, a reduction in sick call and hospitalization, a saving of training time, and the creation of a greater number of well balanced soldiers. Lieutenant Colonel Cohen's ingenuity, tremendous drive, and understanding of human nature have been vital factors in the production of excellent ordnance soldiers, and his work is contributing materially to the success of the war effort."

3. MAJOR JOSEPH W. JOHNSON, JR., Medical Corps, 300th General Hospital. LEGION OF MERIT. "For exceptionally meritorious conduct in the performance of outstanding service in Italy from March 1, 1944, to May 8, 1945. As chief of the Neuropsychiatric Service, 300th General Hospital, Major Johnson organized and personally trained junior officers and enlisted technicians in the care of psychiatric patients. His personal attention, devotion to duty and untiring efforts resulted in the patients' return to general duty rather than evacuation to the Zone of the Interior. As neurologist, he established a center for the treatment of infectious polyneuritis, which stimulated the interest of the medical department and led to the publication of an article dealing with its recognition, cause and treatment. Major Johnson's professional knowledge and untiring interest enabled him to render an unusually valuable contribution to the Medical Corps of the Army of the United States."

4. MAJOR ARTHUR L. BURKS, Medical Corps 28th Infantry Division. THE BRONZE STAR MEDAL. "For meritorious service from 24 July 1944 to 29 March 1945, in connection with military operations against the enemy in France, Belgium, Luxembourg and Germany. Major Burks displayed outstanding professional ability while serving as the Division Neuropsychiatrist during the above period. His cheerfulness, sound judgment and intense energy have manifested themselves in the exceptional manner in which he has performed his duties. Major Burks, at the time of the difficult initial thrusts into the Siegfried defenses, reorganized and assumed responsibility for the Rest Center for medical care of combat exhaustion cases and through his capable supervision, increased the percentage of men returning to duty from 8% to 40%. His accomplishments greatly contributed to maintaining combat strength of the Division and reflect great credit on Major Burks and the Armed Forces of the United States. Entered military service from Oklahoma."

5. MAJOR CALVIN S. DRAYER, Medical Corps, Headquarters, Fifth Army. BRONZE STAR MEDAL. "For meritorious services in support of combat operations from 26 July 1944 to 2 May 1945 in Italy. During this period Major Drayer served as Fifth Army consultant in Neuropsychiatry. His professional ability contributed to a marked decrease in the proportion of men permanently lost to duty by reason of neuropsychiatric illness. As a result of this success, many more men were able to return to duty. Major Drayer sponsored the division rest and rehabilitation centers, which proved of infinite value in keeping minor nerve cases within division areas for full treatment and speedy return to duty. He also devised a screening

system whereby potentially unfit men were never allowed to face the rigors of combat. By his untiring work and interest, Major Drayer has saved countless lives. His actions reflect highest credit upon the Medical Corps of the United States Army. Entered military service from Drexel Hill, Pennsylvania."

6. MAJOR ALBERT JULIUS GLASS, Medical Corps, 85th Infantry Division. BRONZE STAR MEDAL. "For meritorious service in combat during the period 15 September 1944 to 2 May 1945, in Italy. As Division Psychiatrist during this period, Major Glass contributed a valuable service to the Division by establishing a Division Rehabilitation Center to examine and treat individuals suffering from psychoneurosis and exhaustion. By his ability to differentiate between those individuals suffering from mental illness and those who were merely physically exhausted, he was able to salvage many soldiers and conserve fighting strength. He made valuable recommendations to unit commanders and unit surgeons in preventing and treating exhaustion cases. By examining and diagnosing all individuals to be tried by court martial, he accurately determined whether the soldier was suffering from a mental illness thereby insuring that justice was imparted. Major Glass' keen technical ability and outstanding performance of duty has contributed valuable service to conserving manpower in the Division, and reflects great credit upon himself and the military service. Entered the military service from Baltimore, Maryland."

7. MAJOR LEON N. GOLDENSOHN, Medical Corps, 63rd Infantry Division. THE BRONZE STAR MEDAL. "For meritorious service from 4 February 1945 to 30 April 1945, in France and Germany. As Division Neuropsychiatrist, Major Goldensohn was responsible for caring for neuropsychiatric casualties and thereby limiting the evacuation of casualties past the Division Clearing Station, which aided materially in the conservation of manpower. Due to his unceasing devotion to duty and untiring efforts, this assignment was accomplished in a superior manner. The outstanding ability of Major Goldensohn and his high degree of professional knowledge, coupled with his energy and loyalty, reflect great credit upon himself and the Armed Forces of the United States. Entered military service from Washington, D. C."

8. CAPTAIN PETER A. MARTIN, Medical Corps, 104th Infantry Division. BRONZE STAR MEDAL. "For meritorious service in connection with military operations in Belgium, Holland, and Germany from 23 October 1944 and 8 May 1945. As Division Psychiatrist, Captain Martin worked untiringly to save many men for combat duty who otherwise would have been lost to the Division. Keeping constant contact with the front by frequent visits to all forward medical installations, he maintained a personal knowledge of the changing battle conditions which contributed to the battle exhaustion of the men. This necessitated frequent travel over roads that were under enemy observation and shell fire. Captain Martin's untiring efforts, over and above the call of duty, contributed greatly to the successful treatment of an extremely large percentage of battle exhaustion cases and their early return to their combat duties, reflecting the highest credit upon himself and the Armed Forces of the United States. Entered military service from Detroit, Michigan."

9. MAJOR MEYER MASKIN, Medical Corps, 4th Infantry Division. BRONZE STAR MEDAL. "For meritorious service in connection with military operations against an enemy of the United States in France, from 6 June 1944 to 15 September 1944. Entered the Military Service from New York."

10. MAJOR MERRILL MOORE, Medical Corps. BRONZE STAR MEDAL. "For meritorious achievement in connection with military operations against the enemy at Bougainville, Solomon Islands, from 3 July to 31 October, 1944. As psychiatrist at an evacuation hospital, Major Moore's high professional skill and thorough knowledge of the underlying causes, symptoms, and preventive treatment in neuropsychiatric cases has been of inestimable value in maintaining the effective strength of units in this area. Exhibiting untiring energy, zeal and enthusiasm, he has educated officers of combat and non-combat units in the detection and preventive psychiatric treatment of the potentially neurotic soldiers, thus forestalling liabilities to the Army by conditioning men so that they could come through combat operations soundly. Major Moore's outstanding ability and loyal devotion to duty have contributed materially to the success of our operations."

11. MAJOR WALTER MUSTA, Medical Corps, 8th Infantry Division. BRONZE STAR MEDAL. "For distinguishing himself by meritorious service as Division Neuropsychiatrist in connection with military operations in Western Europe during the period 8 July 1944 to 7 May 1945 against an enemy of the United States. Major Musta's outstanding accomplishments and performance of duties are in the highest traditions of the military service. Entered the military service from Ohio."

12. MAJOR JOSEPH SLUTZKY, Medical Corps, 88th Infantry Division. BRONZE STAR MEDAL. "For meritorious service in combat in Italy from 5 March 1944 to 2 May 1945. As Division Neuropsychiatrist of the 88th Infantry Division, Major Slutzky has been directly responsible for the establishment and development in combat of a working system for the handling of battle exhaustion cases, and for the return of a remarkably large percentage of these men to combat. Major Slutzky's organization, which was set up during the division's first days in combat, became a working model for other units to follow, and more than proved its worth in the arduous campaigns through Rome, to the Arno River, through the Gothic Line, and finally the victorious surge to the Alps Mountains. Operating his installation in conjunction with a rehabilitation training center, Major Slutzky's keen perceptiveness and helpful guidance resulted in a minimum loss of fighting strength to the division through battle fatigue. His sound professional knowledge and outstanding devotion to duty have been important factors in the success of a significant phase of the division's medical record in combat. Entered military service from Detroit, Michigan."

13. Major Edward S. Tauber, Medical Corps, 102nd Infantry Division. Bronze Star Medal. "For meritorious service in Holland and Germany from 4 November 1944 to 3 March 1945, in connection with military operations against the enemy. Major Tauber planned and supervised the neuropsychiatric service of his Division with such outstanding skill and good judgment that efficient care and treatment were rendered. Often without proper rest, he afforded each patient his personal attention and returned an unusually large number of men to duty, thereby materially contributing to the success of his organization. Entered military service from New York."

14. Major Lewis Thorne, Medical Corps, 10th Mountain Division. Bronze Star Medal. "For meritorious service in support of combat operations during the period 1 February 1945 to 1 May 1945, in the Apennine Mountains and Po Valley, Italy. During the time the 10th Mountain Division was in combat, Major Thorne, division neuropsychiatrist, established and supervised a division fitness center. Here, individuals suffering from exhaustion and moderate medical and surgical disturbances were rehabilitated for early return to combat. Through his skillful and devoted efforts, many soldiers who might have been evacuated to rear hospitals were kept in the division area, restored to fitness, and able to return to duty in the shortest possible time. In all, more than four hundred and fifty patients were returned to duty during this period, through his experienced and intelligent work. Major Thorne has truly earned the highest commendation and praise for his valuable achievements. Entered the military service from Atlanta, Georgia."

15. Major Isadore Tuerk, Medical Corps, 80th Infantry Division. Bronze Star Medal. "For meritorious service in France during the period 6 August 1944, to 15 December 1944, in connection with military operations against an enemy of the United States. During the period 6 August 1944, to 15 December 1944, Major Tuerk has distinguished himself in his duties as Division Neuropsychiatrist with an Infantry Division. He has exhibited sagacity, superior judgment, extraordinary tact, and outstanding initiative in the fulfillment of the difficult tasks incumbent upon him under the trying combat conditions co-existent with the advance of the Division from the west coast of France to the border of Germany. The efficiency, tireless energy, and sincere devotion to duty demonstrated by Major Tuerk reflects great credit upon himself and the Armed Forces of the United States."

16. First Lieutenant David G. Wright, (a) Medical Officer, Hq., VIII Bomber Command, Army Air Forces, United States Army. Air Medal. "For meritorious achievement while serving as Observer on a B-17 airplane on a bombardment mission over enemy occupied Europe, 17 May 1943. After completion of the bombing run the airplane was fiercely attacked by a large force of enemy fighter planes. During the ensuing fight three members of the crew were seriously wounded and another lost consciousness due to the severance of his oxygen supply line. After skillfully giving first-aid to the three wounded men, Lieutenant Wright began to administer artificial respiration to the Radio Operator who was almost dead from lack of oxygen. After receiving a fresh supply of oxygen, Lieutenant Wright continued to work over the stricken man until he was fully restored to life. The actions of Lieutenant Wright on this occasion were directly responsible for the saving the lives of others and reflect the highest credit upon himself and the Armed Forces of the United States." (b) Medical Offier, 366th Bombardment Squadron, Army Air Forces. Purple Heart. "For wound received in action against an enemy of the United States, 17 May 1943, while serving as Observer on a B-17 airplane on a combat mission over enemy occupied Continental Europe." (c) Eighth Air Force Provisional Field Medical Service School, Army Air Forces. Oak Leaf Cluster. "For exceptionally meritorious achievement, while participating in five separate bomber combat missions over enemy occupied Continenal Europe. The courage, coolness and skill displayed by these Officers and Enlisted Men upon these occasions reflect great credit upon themselves and the Armed Forces of the United States. Entered military service from Pennsylvania."

CORRESPONDENCE

THE PSYCHIATRY-ANTHROPOLOGY RELATIONSHIP

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Because Professor Lowie is an eminent anthropologist whose statements are likely to be taken as authoritative by members of another profession and because the matters he touches upon in his review (vol. 102, pp. 139-140) transcend the vanity of authorship and affect issues of real interest in the history of science, I cannot allow my silence to be interpreted as acceptance of his strictures.

Dr. Lowie states that my chapter "The Influence of Psychiatry on Anthropology" in *One Hundred Years of American Psychiatry* "is marred by several inaccuracies and displays a propagandist's one-sidedness." The second assertion is patently a matter of opinion, and Dr. Lowie is certainly entitled to make public his own judgment. "Several inaccuracies," however, suggests questions of fact rather than opinion. But in only one particular does he substantiate the charge of "inaccuracy." It is true that there is *one* tiny reference to psychoanalysis in his 1915 paper, and so I overstated the case in saying there was not "a single allusion." But a casual mention of Freudian wish-fulfilment in no sense invalidates my general proposition.

Let me comment upon his other accusations seriatim:

1. I was, of course, aware that the anthropologists he mentions had "devoted considerable time to the study of psychology." I cite a number of the relevant papers in this chapter, and I have elsewhere cited the critique of Wundt by Haeberlin to which Lowie refers. But my point was precisely that, although American anthropologists *knew* something about psychology, they—with exceptions I cited—ostentatiously refused to incorporate psychological theories with anthropological theories.

2. My "singling out of the concept of the 'sentiment' as virtually the only one taken over from psychology by the older anthropologists" may be "odd," though I had thought it a commonplace of contemporary anthropological discussion. Certainly this judgment did not originate with me. Malinowski and Radcliffe-Brown have both made this statement in print, and I have heard at least a score of others make the identical observation—or agree with it—orally.

3. Surely the principle of individual variability came into American anthropology primarily from biology (through Boas) rather than from psychology.

4. Professor Lowie says "Again, he makes much of the fact that my "Primitive Religion" (1924) mentions neither Freud, psychoanalysis nor psychiatry. The stricture reveals the strange dogma that content counts only if conventionally labeled." Not at all. Only if Lowie's book was purely an original substantive-theoretical presentation without critiques of other theorists of primitive religion would his inference be justified. But he does treat Durkheim, Marett and others by name in some detail. Why, then, does he fail to make any explicit reference to the psychoanalysts who had written voluminously on the same topics?

5. As for "fantastic overestimations of two fugitive publications [sic] by the late Edward Sapir," several remarks need to be made. First, Professor Leslie Spier (who in general is much closer to Lowie's views than to mine) thought these "fugitive publications" significant enough so that after Sapir's death he had them mimeographed and gave them a wide distribution. Second, if we may judge at all of an article's influence by the number of citations it evokes, there can be no doubt at all that these two papers had unusual importance in psychology and psychiatry as well as in anthropology. Finally, Lowie lists three persons who were stimulated by Boas to "study the attitude of primitive artists toward their traditional norms" and clearly implies that Sapir's efforts in the personality and culture field began and ended in talk. But it is easy to give a much longer list of those instigated

by Sapir to go out and do highly productive field research along the lines sketched in these two papers: Dyk, Beaglehole, Dennis, Mandelbaum, Dollard, Kluckhohn, and many others. A number of these have made it plain in print that these two papers stimulated them or constituted statements of their conceptual starting points.*

6. Professor Lowie suggests that one statement of mine (p. 596) applies to older American anthropologists in general. The text makes it altogether plain that "deep-seated, unconscious factors" refers only to a single individual (Kroeber) for in the same sentence I raise the question as to whether Kroeber's avoidance was due to such factors *or* to "submission to an occupational psychosis of his profession."

7. Yes, dreams, etc., had been collected before any "impact of psychiatry" but my contention is that they were collected less systematically and frequently, that the psychological context was almost never given, that they were collected as isolated and unrelated bits of information, that they were never analyzed with any sophistication.

Very probably this detailed reply is unnecessary for, in my opinion, it is so patent that Professor Lowie is writing primarily as *laudator aetatis suae*. But it seemed worthwhile to set the record straight (as I see it) for psychiatrists who are not likely to be fully familiar with the pertinent facts.

CLYDE KLUCKHOHN.

HARVARD UNIVERSITY.

Editor, AMERICAN JOURNAL OF PSYCHIATRY:

SIR: Contrary to what a reader of Professor Kluckhohn's letter might infer, I accept whole-heartedly his plea for closer coöperation between anthropology and psychiatry and recognize that modern psychology has enlarged the ethnologist's horizon. What I reject is the notion that by some alchemy a psychoanalyst who uses poor ethnographic data can transmute this dross into scientific gold. I also reserve the right to judge whether a particular psychiatrist does or does not add to my understanding of culture or of "persons-in-culture." If I reject such a statement as that quoted from Roheim (p. 605), it is because no evidence seems to be offered for the conclusions drawn. If Dr. Kluckhohn nevertheless believes that anthropologists "have gained a great deal" from an author capable of such writing, I wish he would explain *what* they have gained.

However, a full discussion of relevant issues would require a long article. I must content myself with a commentary on Dr. Kluckhohn's seven points:

1. It remains false that even "academic psychology has had a surprising minimum of influence upon anthropology." Professor Kluckhohn seems constantly to exaggerate the importance of labels. Not what Kroeber, Wissler, and I (as well as Hocart and Rivers) wrote in the abstract about the relations between anthropology and psychology counts, but what we did concretely. Well, Kroeber soon came to concern himself with psychoanalysis; Wissler in his *Man and Culture* grappled with a series of psychological questions, explicitly admitting the insufficiency of a purely cultural approach; I was greatly impressed with Galton's studies of color and number symbolism and with Fechner's aesthetic ideas, which I tried to apply ethnographically. We all collected versions of the same myth from different informants. The results may be trifling, but that is not the issue: we *were* influenced by academic psychology.

2. What American anthropologists have used the concept of the "sentiment"? Boas? Wissler? Goldenweiser? Wallis? Radin? Where?

3. Individual variability was introduced into psychology by Galton (see William James), whom Boas and his friend Cattell greatly admired.

4. I cannot accept Kluckhohn's stricture. Tylor and Marett were anthropologists, Durkheim controlled ethnographic literature, hence they merited explicit consideration in an anthropological book; anthropological ignoramuses—no matter how voluminous—did not. It was enough to deal with such of their ideas as seemed useful *if* combined with sound ethnographic observations.

5. Here I am glad to accept the correction

* The detailed and careful review of the same volume by Dr. David Shakow of Worcester State Hospital (Psychological Bulletin, 42:423-433; 1945) comments: "The important part which Sapir has played in the association of the two disciplines is duly recognized . . . ." (p. 426).

that Sapir did stimulate productive field work of psychological import. This, however, I ascribe to the inspiring influence of his personality, not to that of the two brief papers in question.

6. On p. 594 Kluckhohn speaks of "inner, largely unconscious needs" that make anthropologists as a class escape from the personal. Only on p. 596 f. are "deep, unconscious factors" limited to Kroeber. However, Kluckhohn seems to miss my point. I hold it scientific etiquette to eschew interpretations of an author's procedure in terms of his conjectural emotional set, especially when we know the objective considerations that make anthropologists recoil from generalizations by many students of personality.

7. On this point there is partial agreement. In some respects the modern psychology has brought an advance in techniques and in concentration on objectives which, if not ignored by earlier investigators, were generally slighted. The better ones, however, were not nearly so dull or so naïve as might be inferred from Dr. Kluckhohn's chapter, or even from his longer and fairer treatise on "The Personal Document in Anthropological Science" (Bulletin 53 of the Social Science Research Council, New York, 1945).

Indeed, one grievance against Dr. Kluckhohn is the hypnotic effect upon him of programmes and labels, his failure to do what a sociologist like W. I. Thomas has done, viz., scrutinize the unlabeled ethnographic literature for his purposes. Characteristically, he considers Paul Radin's *Crashing Thunder,* but not the far more important data in that author's *The Winnebago Tribe.* But then they are not advertised as "Personal"! Taking at random a few volumes, I should like to refer to Wm. Thalbitzer's *The Ammassalik Eskimo* (Copenhagen, 1923, p. 455 et seq.) with its statements by a shamaness; Clark Wissler's, Leslie Spier's and others' records of visions, social customs, war adventures (*Anthropological Papers, American Museum of Natural History,* v. 7:71-87, 273-276; v. 9:233 ff.; v. 11:162 f., 166, 168, 173 f., 191 f., 194 f., 296-299; v. 21:74 ff., 85 f., 117, 120 140-142, 170, 255-263, 331-334, 352-354, 361-363; v. 25:325 f., 327, 330 f., 333 f., 336-340, 391-401); Radin's "Ojibwa and Ottawa Puberty Dreams" (*in* Essays in Anthropology in Honor of Alfred Louis Kroeber, 233-264).

I have no desire to gloss over the shortcomings of my contemporaries, let alone to eulogize their accomplishments, as Kluckhohn suggests. But we did not require "the impact of psychiatry" (p. 616) to recognize the inferiority of "the question and answer method" and, as the above incomplete list proves, it is not only "now" that field workers have at last awakened to the utility of personal documents.

The role of a spoilsport is not at all congenial to me. I sincerely hope that the convergence of so many able investigators—Linton, Mead, Du Bois, Devereux, Kluckhohn himself, and others—on psychologico-anthropological problems will yield results commensurate with the effort put forth. But as an historian of my science I have to record that to date major achievements along the new lines have been few; and I must specially warn against confounding magnificent programmes with magnificent results.

ROBERT H. LOWIE.

UNIVERSITY OF CALIFORNIA,
BERKELEY, CAL.

A WORD FROM PROFESSOR JANET

Dr. William L. Russell has received from Dr. Pierre Janet in Paris a letter which he has kindly sent with permission to publish, believing that the friends of Dr. Janet on this side of the water will be gratified to have news of him. Dr. Russell comments: "His many friends and admirers in this country will, I am sure, be glad to learn that he has survived the German occupation of Paris, and in spite of great affliction during the period continues to be actively interested in the advancement of the objectives to which his professional life has been devoted." Pierre Janet's letter follows:

54 RUE DE VARENNE
LITTRÉ 99-55—PARIS VII[e]
20 JUILLET 45

CHER DOCTEUR RUSSELL:

C'est une grande joie pour moi de recevoir une lettre de nos amis d'Amérique et de voir que nous ne sommes pas tout à fait oubliés après ces années de triste silence.

Nous avons vécu tout de même et nous nous retrouvons, peut être, espérons le, pour une meilleure période. J'ai vieilli, 86 ans c'est assez sérieux, et J'ai perdu bien des membres de ma famille, mon frère le dr. Jules Janet, mon fils Michel Janet qui commencait une belle carriére d'ingenieur et ma pauvre femme que vous avez connue qui a succombé il y a prés de deux ans à une tumeur abdominale.

Je vois que vous restez seul aussi, c'est le sort des vieux, il faut continuer à travailler pour remplir la vie et il faut nous intéresser au travail des jeunes.

Avec mes meilleurs souvenirs et mes sentiments dévoués

P. JANET.

COMMENT

PRESIDENT'S LETTER

Although many of us have been looking forward to the end of the war as a time when most of our problems would be solved and when we could relax, the immediate effect has been to bring still new problems before us and even to increase some of the old problems.

The nursing shortage is still more exaggerated, due to the fact that many of our best nurses who have stayed on loyally throughout the war are now leaving to rejoin their families or to marry returning service men.

One of the most serious problems confronting us, and one for which we do not have an adequate solution at present, is the returning psychiatrist. The more senior men who return to well-established positions or to private practice present no problem. There are, however, a number of other men, some of whom wish to make a change and others who wish to have further training in psychiatry.

There are, therefore, two problems: (1) To aid returning psychiatrists in re-establishing themselves or in finding new positions; (2) The securing of further training for those who have had only a limited psychiatric experience.

It has been emphasized how short we are of well-trained psychiatrists. There are probably less than 5000 psychiatrists in the country and estimates by the Committee for Mental Hygiene and others indicate that about 20,000 are required to fill all of the needs at the present time.

A great many men in the armed forces have had a limited experience in psychiatry and are anxious to continue. These men are asking what are the possibilities for further training. There are only about 500 approved residencies in psychiatry in the United States. Already over a thousand men in the armed forces have indicated their desire for further training in psychiatry.

We are faced, therefore, with a very critical situation. We need more psychiatrists, there are a large number of physicians who wish to go on in psychiatry, but there are not adequate training facilities for them. As a first step we have conferred with the National Committee for Mental Hygiene, which had set up a tentative plan for furnishing information as to locations and training opportunities to the returning service men. A special committee, composed of Dr. Samuel W. Hamilton, Dr. Arthur H. Ruggles, and Dr. Howard W. Potter, was appointed to work on a joint committee with the National Committee for Mental Hygiene. The National Committee for Mental Hygiene appointed Dr. Frank Fremont-Smith, Dr. Frank J. O'Brien, and Miss Mildred Scoville as members of this committee. One meeting has been held and Dr. Frank Fremont-Smith was elected chairman.

It was agreed that the first thing to do was to secure an executive to work on this matter. It was estimated that a budget of $12,900 was necessary and that the National Committee for Mental Hygiene had only about $7,000 available. Accordingly, the American Psychiatric Association appropriated the sum of $6,450 to provide the necessary money for carrying out this plan. It was agreed that the work should be done through the offices of the National Committee for Mental Hygiene, which were already set up to carry out such an undertaking. Furthermore, there was neither personnel nor space available for the American Psychiatric Association to attempt to carry this out at its own headquarters. It is quite likely that by the time this letter appears further plans will have been worked out and an executive chosen.

Meanwhile, I wish to call to the attention of all of our members that the proper source for information as to positions and places for training is through the National Committee for Mental Hygiene.

There has been considerable discussion as to how training might be given additional men when there is not an adequate number of residencies available. Under the G.I. Bill

of Rights it is possible for a number of our medical schools to set up graduate courses. The returning service men will have all tuition paid and will receive $50 a month maintenance allowance if single and $75 a month if married. By working largely in the capacity of an extern it will be possible to give an additional number of men good training in psychiatry. It is suggested that all of our medical schools consider carefully the number of returning service men that can be cared for in this fashion and make prompt arrangements to make such training available. It is suggested that the National Committee for Mental Hygiene be notified so that it will have such information for those who write in. Under two bills before Congress at the present time, funds might become available for the training of these men. The Veterans Bureau has also indicated its intention of setting up several psychiatric training centers and expects to have at least one such center ready for training about February 1, 1946. It is also possible that some of the foundations will make fellowship funds available, particularly for men with considerable training in psychiatry who wish to qualify for special teaching or research positions.

A number of the returning service men wish a refresher course to put them in touch with the latest developments and to prepare them for taking the examinations of the American Board of Psychiatry and Neurology. It is probable that a number of medical schools will annouce refresher courses of two to three months' duration to which the returning veterans will be eligible under the G. I. Bill of Rights.

I am sure that the Association will be interested in an account of personal experiences indicating the difficulties to be solved and the ways of trying to meet them. At the Langley Porter Clinic, where we have twelve residencies, I have, as of October 26, received eighty applications for residencies. Over three-fourths of these are from returning service men. We are planning to take on six additional veterans as graduate students under the G.I. Bill of Rights. I may remark that we now have these residencies and graduate positions filled for the coming year, with many suitable persons being rejected because of our limited facilities.

As a further measure we have set up a three months' refresher course, which begins the first of January 1946. This course will be limited to fifty persons and already the indications are that we will have many more qualified persons applying than we can possibly take care of. It may be that the course will be repeated but this is still unsettled at this time.

I mention all this as a personal experience because I believe that some similar plan can and should be carried out at a number of our medical schools where good facilities for psychiatric training are available. Even if this is pushed to the limit I am afraid we are not going to care for all of the men who desire further psychiatric training.

Still another suggested procedure is that some of these men may be willing to take one or two years of neurology at this time and then come into psychiatry when the demand for training is somewhat lessened. I am therefore suggesting that whenever returning service men desire additional training in some allied field they check the possibility of securing this training at once.

The special committee on veterans has been in constant touch with the Veterans Administration. I am pleased to state that Major General Paul R. Hawley, who is Acting Surgeon-General of the Veterans Administration, has been most interested in developing a psychiatric set-up in the Veterans Administration and has asked our committee to make suggestions for improving the service. I think that all of us who have had any contact with the Veterans Bureau recently feel that there is a most cooperative spirit and a genuine desire to see that everything possible is done to develop psychiatry in the Veterans Administration in a satisfactory fashion. Dr. Daniel Blain, who has been in the Public Health Service throughout the war and who has recently had charge of the program for rehabilitation of seamen under the War Shipping Board, has been appointed by General Hawley to assist in working out the psychiatric program. I am sure that the Association is gratified that one of its members, who has had experience during this war and particularly who has worked on the problem of rehabilitation, has been chosen for this position. I have also had a personal communication from General Haw-

ley in which he states that the Veterans Bureau is planning to take over the Winter General Hospital at Topeka, Kansas, within the next three months and is working on plans to establish residencies and internships. The Menninger Clinic will work in close cooperation with the Veterans Administration in seeing that a satisfactory training program is set up. This new policy of the Veterans Administration is to be highly commended and there is no question but that the Veterans Bureau will be able to attract better men to its service by having a training program as an integral part of its set-up.

The next meeting of the Council has been set for December 18 and 19 at the Hotel Pennsylvania, New York. All of these important matters will come up for discussion at that time and, in addition, it is hoped that the report of the Committee on Reorganization will be available. As stated before, this committee is empowered to make a thorough study of conditions and to recommend any changes in the organization of the American Psychiatric Association that it sees fit. The Council at its December meeting will consider these recommendations and in turn will decide whether or not to recommend them to the Association. I wish again to point out that only the Association itself is empowered to take final action and this can be done only at the next annual meeting. The date for the next annual meeting has been set for May and will be held at the Palmer House, Chicago.

May I remind those who wish to present papers at the meeting that they should write Dr. William Malamud, Worcester State Hospital, Worcester, Massachusetts, stating the nature of the paper and giving sufficient information of its contents to enable the Program Committee to decide on the desirability of including the paper on the program. Since the Program Committee will be meeting also on December 18, it is important that these applications go in at once.

As psychiatrists, we have felt called upon to emphasize the large percentage of psychiatric casualties and the need for doing something for these men. Unfortunately, this has been misinterpreted in some circles as indicating that every returning soldier needs psychiatric treatment and would have great difficulties in adjusting. Such is not the case, and it is unfortunate that such an impression has become widespread. Our Committee on Public Education has done a good deal to correct such an impression but nevertheless it does seem necessary to call this point to your attention and to ask that all of our members see to it that a proper perspective is given both the public and the returning service man. Most psychiatrists agree that the majority of the men returning from the service will not be harmed by their experience and many of them will be benefited and be better men in every way. However, we as psychiatrists feel the need of emphasizing the importance of the psychiatric problem and the necessity of providing every possible facility for the treatment of the psychiatric casualties.

In this connection I would like to call to the attention of the Association War Department Pamphlet 21-35 entitled "What's the Score in a case like mine?" This little leaflet has been prepared by the Office of the Surgeon General and it is given to men discharged with a psychiatric diagnosis. It explains to them in simple terms what a psychiatric diagnosis means, what their prognosis is, and what they can do to help themselves. Copies of this booklet are on sale at the Government Printing Office so that civilians, physicians, clinics and other agencies handling these cases can obtain them by writing for them. It is my understanding that a nominal sum, probably 5¢ a copy, will be charged. I believe that this booklet is useful to give to both patients and families of servicemen. To many the written word has a certain magical quality and they therefore accept what they read when they will reject what is told them by the doctor.

KARL M. BOWMAN, M. D.

BRIGADIER GENERAL WILLIAM C. MENNINGER

Announcement was made on September 10, 1945, of the promotion of Col. William C. Menninger, Chief of the Neuropsychiatric Division of the office of the Surgeon General of the Army to the rank of Brigadier General. The JOURNAL extends its warmest

felicitations to General Menninger on this well-deserved recognition of his services.

Building upon the sound foundations laid by his predecessor, the late Colonel Roy D. Halloran, General Menninger has developed the Division and greatly enlarged its activities. The large numbers of psychiatric patients have been ably cared for, but in addition significant advances have been made in preventive psychiatry, and the Division, despite resistances to psychiatry which are not unique to the Army, has come to be recognized as making an important contribution to the welfare and efficiency of Army personnel. It is very pleasing to the membership of the Association to see this recognition of the value of psychiatry, sadly belated though it be. Psychiatry at last takes its place in the Army as the co-equal of medicine and surgery.

DR. GILLESPIE PASSES

News of the untimely death of Dr. R.D. Gillespie of Guy's Hospital and the Royal Air Force will bring grief to the readers of the JOURNAL, all of whom no doubt will know him through the standard English "Text-Book of Psychiatry" of which he and Dr. D. K. Henderson are co-authors, and which is now in its sixth edition.

Dr. Gillespie's recent contribution to military psychiatry—"Psychological Effects of War on Citizen and Soldier"—is also widely known and presents a comprehensive and scholarly survey of the neurosis problem in war time. It will be recalled that this book was based on the Salmon Memorial Lectures delivered under the auspices of the New York Academy of Medicine. On the occasion of these lectures many of his North American friends and colleagues enjoyed personal contact with Dr. Gillespie on his speaking tour through the United States and Canada. In the words of Sir Harold Whittingham, Air Chief of the Medical Service of the Royal Air Force, who sanctioned leave for the purpose, the journey was undertaken "for the furtherance of mutual understanding and contacts between English-speaking peoples on either side of the Atlantic."

Dr. Gillespie had indeed proved to be a good ambassador and had deepened the spirit of friendship and knit more closely the ties between British, American and Canadian psychiatry.

We mourn his passing and extend to Mrs. Gillespie most cordial sympathy.

A memorial and biographical sketch of Dr. Gillespie will appear in a later issue of the JOURNAL.

C. B. F.

NEWS AND NOTES

INSTITUTE OF FORENSIC MEDICINE FOR NEW YORK.—New York University and Bellevue Hospital are collaborating in an extensive expansion and building program in connection with the reorganization of the present Bellevue Hospital situated between 26th and 30th Streets. The entire project representing over $27,000,000, will cover four additional city blocks, extending north to 34th Street, between First Avenue and East River Drive.

Among the new buildings to be provided by the university at a cost of $15,000,000 will be an Institute of Forensic Medicine, the first of its kind in this country. The institute will give instruction in legal medicine and serve as a center for investigation; it may be expected to play a leading part in the exploration of medico-legal problems in America.

THE JOURNAL "THE NERVOUS CHILD" CHANGES HANDS.—This journal has been bought by its founder and Editor-in-Chief, Dr. Ernest Harms, from its previous owner, Grune & Stratton, Inc., medical publishers, of New York City. *The Nervous Child* will be produced from now on by a new publishing house, Child Care Publications, 30 West 58th Street, New York 19, New York, which has been created for this purpose. The same publishing house will start to issue during 1946 another periodical entitled *The Journal of Child Psychiatry*, devoted to unsolicited contributions in the field of mental disease in children.

DEATH OF DR. ELIZABETH LEIPER MARTIN.—Dr. Martin was a pioneer among women in medicine, being the second woman graduated from the University of Western Pennsylvania, now the University of Pittsburg, in 1902.

Her career in psychiatry began at the Friends Hospital in Philadelphia in 1921. She served also on the staff of Butler Hospital under Dr. Ruggles. Perhaps her most important contribution was in the field of college mental hygiene, and she was largely instrumental in establishing mental hygiene services in Pembroke College of Brown University and Wellesley College.

Dr. Martin's death at the age of 74 occurred September 8, 1945 at Blairstown, New Jersey.

THE INSTITUTE FOR HUMAN ADJUSTMENT, UNIVERSITY OF MICHIGAN.—The Institute for Human Adjustment was created several years ago to extend the facilities for research and training in the Graduate School at the University of Michigan. The units located at the university are the bureau of psychological services and the speech clinic. The psychological bureau offers diagnostic examinations for children and adults, vocational counseling, admissions tests and group examinations for the university, and in-service training facilities for students in clinical psychology. The training program, offered in conjunction with the department of psychology, has special curricula leading toward a psychometrician's certificate, a two-year professional degree, Master of Clinical Psychology and a doctorate with specialization in Clinical Psychology. Wilma T. Donahue, Ph.D., is the director of the bureau.

The speech clinic offers training programs in speech correction and speech pathology in conjunction with the department of speech. Diagnostic and treatment services are available for all types of speech disorders and hard of hearing cases. Ollie L. Backus, Ph.D., is the acting director of the speech clinic.

Clark Tibbitts is the director of the Institute for Human Adjustment.

NEW POLICY AT MOUNT HOPE RETREAT.—The venerable Mount Hope Retreat of Baltimore, founded in 1840 by the Sisters of Charity for the care of mental cases, is to be reorganized and renamed The Seton Institute.

A unique and unprecedented feature of the

reorganization will be the creation of an active staff on the same basis as that prevailing in general hospitals. Psychiatrists elected to the active staff will have the privilege of admitting their private patients to the Seton Institute and to treat them personally with the same freedom as that enjoyed by physicians and surgeons associated with general hospitals.

The new plans include facilities for training psychiatric internes and for the three years of postgraduate service required of diplomates of the American Board of Psychiatry and Neurology.

A non-sectarian medical advisory board has recently been elected consisting of Dr. Wendell Muncie, Chairman, Dr. Horace K. Richardson, Secretary, Dr. Lewis B. Hill, Dr. Arthur J. Lomas, Dr. Ralph P. Truitt and Dr. Esther Richards.

A clinical director is to be appointed and applications from candidates for this position are now invited Applications may be forwarded to Dr. Horace K. Richardson, Secretary, 11 E. Chase St., Baltimore 2, Md.

Psychiatric Position in North Carolina.—The North Carolina State Board of Public Welfare announces that there is a position available for a psychiatrist as Director of its Division of Psychiatric and Psychological Services. This position carries with it opportunity for work in child psychiatry and public relations for the development of psychiatry throughout the state. The psychiatrist will be assisted by three psychologists skilled in clinical psychology with children who work partly under the support of the Children's Bureau in Washington. The position carries with it a stipend of $5,000 per annum.

For information address Commissioner Ellen Winston, The North Carolina State Board of Public Welfare, Raleigh, N. C.

Salmon Memorial Lectures.—The Salmon Lectures for 1945, delivered annually under the auspices of the New York Academy of Medicine, were given by Dr. Roy G. Hoskins on Nov. 2, 9 and 16. Dr. Hoskins, who is research associate in physiology at the Harvard Medical School, director of research at the Worcester State Hospital and an authority on neuro-endocrine function, chose as the subject of his lectures: "The Biology of Schizophrenia."

Bibliography on Military Psychiatric Social Work.—Of interest to all social workers and especially to those engaged in psychiatric social work is the "Bibliography of the Development and Practice of Military Psychiatric Social Work" prepared by Mrs. Mina Field, the American Association of Psychiatric Social Work, and made available by Josiah Macy Jr., Foundation, New York. This listing, which includes 58 references on military psychiatric social work, will be distributed through the American Association of Psychiatric Social Workers, Room 916, 1790 Broadway, New York 19.

Course on General Semantics.—The Institute of General Semantics, Chicago, offers a two weeks' course, December 27–January 10. The following scholarships are available: 5 grants covering one-third to two-thirds of tuition; Grossman Memorial Scholarship including travel stipend restricted to the psychiatric profession; and special reduction in tuition for former seminar students. Registration forms may be obtained from the Institute of General Semantics, 1234 East 56th Street, Chicago 37.

An Experiment in the Psychiatric Treatment of Promiscuous Girls.—The Venereal Disease Division, U. S. Public Health Service, announces the results of a demonstration of the application of psychotherapy and psychiatric case work as a preventive measure in venereal disease control. This project was undertaken by the psychiatric service of the San Francisco city clinic under the auspices of the United States Public Health Service, the California State Department of Public Health and the San Francisco Department of Public Health.

In the absence of a definition of promiscuity which could be used objectively, an arbitrary criterion was set up. The period of time considered was the 6 months immediately preceding registration in the service. Promiscuous patients included married women who had engaged in any extramarital

sexual relations within that period and single women who had had sexual relations with more than one man or with one man more than twice within the same period. Prostitutes were not included. Referral of cases was chiefly from the venereal clinic.

An analysis was made of 365 female patients of whom 287 were classified as promiscuous and 78 as potentially so; 80% were white; 20% non white; the average age was 20. Approximately $\frac{1}{6}$ of the patients availed themselves of intensive, prolonged treatment; and an additional $\frac{1}{2}$ of the patients utilized consultative services; while slightly more than $\frac{1}{3}$ were not interested in the Service.

While changes observed in patients during the course of treatment suggested that they had benefited from the services given and had reduced their promiscuity, only 40% could be followed up successfully after 6 months. While this number was too small for conclusive deductions, it was found that 90% were less promiscuous and 50% had ceased sexual relations outside of marriage entirely.

It was concluded that psychiatric facilities can be used advantageously in connection with a venereal disease clinic to decrease, modify or eliminate promiscuity and resultant venereal disease among a suitable group of carefully selected female patients who voluntarily make use of treatment service, and that psychiatric treatment should be made available to promiscuous male patients who are in need of counseling.

UNIVERSITY OF CALIFORNIA REFRESHER COURSE IN PSYCHIATRY.—The University of California Medical School will give a twelve-weeks' refresher course in psychiatry beginning January 7, 1946. This course is designed especially for returning servicemen who plan to take the examination of the American Board of Psychiatry and Neurology.

The course will be limited to fifty, and preference will be given to veterans and residents of California. There will be a total of 420 hours, and this will usually be seven hours a day, five days a week. The tuition is tentatively set at $200. This will, of course, be paid by the Government in the case of returning servicemen.

The preliminary arrangement of time is as follows: Neuroanatomy, 24 hours; neuropathology, 24 hours; electroencephalography, 6 hours; x-ray diagnosis, 12 hours; psychology and psychopathology, 38 hours; psychoanalysis, 30 hours; functional and organic psychoses, 41 hours; psychoneuroses, 20 hours; therapy, 25 hours; psychosomatic problems, 28 hours; neurology, approximately 60 hours; the remainder of the time to miscellaneous subjects.

Applications should be sent to: University Extension, University of California, 2441 Bancroft Way, Berkeley, California.

INSTITUTE FOR THE SCIENTIFIC TREATMENT OF DELINQUENCY.—Now that the war has ended this Institute would like to resume and extend its contact with friends and interested organizations in the United States.

The Council would particularly appreciate receiving for its library and the use of its members and students any publications bearing on the general fields of delinquency and social services.

Reprints, reports or other publications should be forwarded to Miss I. M. James, I.S.T.D., 17 Manchester St., London, W. 1, England.

CONFERENCE ON NEUROPSYCHIATRY.—A conference on "Treatment in Neuropsychiatry" was held at the Bushnell General Hospital, Brigham City, Utah, October 1-2. The meeting, organized by Colonel Lauren H. Smith, Consultant in Neuropsychiatry, Ninth Service Command, was to provide the chiefs of the neuropsychiatric services of this Service Command with an opportunity to determine the value of treatment procedures being followed and to share the viewpoints and experience of each other. Brigadier General William C. Menninger, Director Neuropsychiatric Consultants Division SGO was in attendance, and took part in the discussions. Brigadier General Robert M. Hardaway CG, Bushnell General Hospital welcomed the members of the conference. Colonel Lauren H. Smith presided over the meetings. Topics of papers were: General Therapeutic program in an Army General Hospital; Convulsive Shock Therapy in an Army General Hospital; Subconvulsive In-

sulin Shock Therapy; Psychotherapy of the Neurologically Disabled Soldier; Emotional Adjustment of Newly Blinded Soldiers; Reeducation of Aphasic Patients; Treatment of Psychiatric Patients in an Army Regional Hospital; Psychiatric Aspects of Debarkation Patients; Psychiatric Aspects of Replacement Depot Interviews; Redistribution Station as a Therapeutic Facility; and Interviews with Separatees. The following presented papers: Col. Olin Chamberlain, Lt. Col. Mark Zeifert, Lt. Col. Edward Harper, Lt. Col. H. D. Shapiro, Major Arthur Kasey, Jr., Major Daniel Sullivan, Major Clarence Godard, Major Leopold Wexberg, Capt. Charles Duckman, Captain Arpad Pauncz and Lt. Joseph Wepman.

Graduate Course in Psychiatry, McGill University.—McGill University has announced a four year post-graduate course in psychiatry, leading to a diploma. The prerequisites for this course are a degree from an approved medical school or college, a general interneship of one year's duration, and satisfactory personal qualifications.

The course is designed to prepare men primarily for work in teaching, research, community and consulting fields. It includes experience in the Allan Memorial Institute of Psychiatry, and on the wards and in the outpatient departments of the Royal Victoria Hospital. Part of the time is spent in dealing with long-term cases in designated mental hospitals, in neurology and neuropathology and in community psychiatry.

Social Impact of Science.—As an aid in the study of legislation on science now before Congress, the Subcommittee on War Mobilization of the Senate Military Affairs Committee has issued a select bibliography on "The Social Impact of Science."

The bibliography has been prepared by the Library of Congress. It lists more than 500 titles of books, pamphlets, articles and Congressional bills and reports dealing with the social and economic problems arising from scientific progress. A special section covers the available literature on atomic power, including several volumes yet in press.

"The atomic bomb dropped on Hiroshima has effectively blasted away any remaining belief that the impact of science upon society is something which can be ignored," Senator Kilgore, Chairman of the Subcommittee stated. "The bibliography reflects an increasing amount of thinking and writing on this subject over the past 15 years. Science has become a matter of primary importance to every citizen, in peace as in war."

Psychiatry in the American Journal of Nursing.—As an initial step in its extensive postwar editorial expansion program, the *American Journal of Nursing* has appointed to its staff a new assistant editor whose work will be devoted mainly to developments in the field of psychiatric nursing.

Edith Patton, the new editor (B. A., Smith College; M. N., Western Reserve) will bring to her important new assignment an experience gained at the Westchester Division of the New York Hospital, at Massachusetts General Hospital and at Norwich (Conn.) State Hospital, at which latter institution she served as assistant director of nursing in charge of education. Miss Patton's name is familiar to the nursing profession through her published contributions in the field of psychiatric nursing. Her appointment to the staff of the *American Journal of Nursing*, the official voice of the American Nurses' Association, will enhance the usefulness of that invaluable publication.

American Group Therapy Association.—The third annual conference of the American Group Therapy Association will be held at the Commodore Hotel, New York City, Friday evening, January 4, 1946 at 8.30 p.m. and Saturday, January 5, 1946, 10 a.m.-4.30 p.m. The topic of the conference will be "Clinical Applications of Group Psychotherapy." Papers will be given on the effects of group psychotherapy on psychotics, neurotics, speech disorders, psychopathic personalities, delinquents, character disorders, social maladjustment and pre-school children.

Three round tables will also be held on "Military and Post-Military Group Therapy," "A Case Summary in Relationship Therapy," and "A Case Summary in Interview Group Therapy."

PEORIA REHABILITATION CENTER.—This project known as The Peoria Plan has recently published a report of its first five months' work. In close co-operation with social agencies, Veterans Administration, industry and the medical profession, the centre aims to assist in the readjustment of the physically and mentally handicapped through community participation, individual counselling and the conference technique. Seventy-five men passed through the psychiatric service during the period reported upon.

ASSOCIATION FOR RESEARCH IN NERVOUS AND MENTAL DISEASE.—The December meeting of the Association, the program of which was a symposium on epilepsy, has been postponed until December 1946. The same program will hold for next year's meeting.

BOOK REVIEWS

THE MALE HORMONE. By *Paul De Kruif.* (New York: Harcourt, Brace & Co., 1945.)

A physician reviewing Paul De Kruif is immediately placed at a disadvantage. One gets the impression from De Kruif's book that physicians are one of the greatest forces of evil playing a rôle in the retardation of scientific progress in medicine. Therefore any adverse criticism would immediately be interpreted by the author as an expression of the stuffy and rigid attitude of another one of those medical obstructionists. With this introduction I may then proceed to say that I found his book exciting reading, as De Kruif's books usually are. That he sacrifices a more critical evaluation of testosterone therapy for the sake of a journalistic mystery story technique cannot be held too much against him because of the interesting, if somewhat repetitious reading it provides.

The author's interest in testosterone was awakened by the anxiety of his own approaching decline. He traces the development of testosterone from its early experimental phase to the present clinical applications and in a general way covers the literature quite well, stressing the importance of the material which tends to prove his point and playing down that which does not. The present state of testosterone therapy is still in the experimental phase, but this does not deter the author from jumping to far-reaching conclusions which even those who are doing the work, do not dare to make. He foresees the application of testosterone therapy in every field of human endeavor and his attitude can be best expressed by the following quotation:

> "We know how both the St. Louis Cardinals and the St. Louis Browns have won championships, super-charged by vitamins. It would be interesting to watch the productive power of an industry or a professional group that would try a systematic supercharge with testosterone—of course under a good hormone hunter's supervision."

One wonders what the Dodgers are waiting for.

The effect of a book such as De Kruif's is usually to crowd the physician's waiting room with patients requesting the new treatment. If a doctor points out that perhaps this treatment is not quite indicated in his patient's condition, he will be regarded as old-fashioned.

It is probable that after all the excitement has died down, testosterone therapy will eventually take its place as a valuable tool in the physician's increasing armamentarium. Whether it will fulfil De Kruif's wishful thinking remains to be seen. So here is to a long and fruitful life but "patience and fortitude."

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THE PHILOSOPHY OF EDWARD BELLAMY. By *Arthur E. Morgan.* (New York: King's Crown Press, 1945.)

Edward Bellamy is best known as a writer of psychological novels—which have much in common with Hawthorne's guilt-obsessed productions—and as the author of two books on social reform, "Looking Backward" and "Equality," both of which enjoyed enormous popular acclaim in their day. As a reformer, his voice was one of the earliest raised against the aggrandizing tendencies at work within the American economy in the last quarter of the nineteenth century. In these tendencies he detected many an outward and visible sign of an inward and spiritual disgrace.

In the present monograph, Arthur Morgan, Bellamy's biographer, augments our information about the man himself by providing us with a selection of fascinating insights into the philosophy of life which inspired all his more serious creative achievements. These insights are of special interest to any of Bellamy's followers since they have been gleaned in the main from hitherto unpublished materials contained in private notebooks and letters.

The essence of Bellamy's philosophy is given in an essay entitled "The Religion of Solidarity," which he wrote in 1874, when still a young man and which Dr. Morgan places at the beginning of the book as an introduction to everything which follows. In substance the essay is not exceptional; its thought is clearly in direct descent from Emerson and the "transcendentalism" of the Concord Group. The theme of the "over-soul," of the universal self within us which establishes the ultimate identity of our lives with all life about us is the burden of its message. In this it is not original, nor does it purport to be. It is quite consciously an attempt simply to restate the significance of an experience which has been in one form or another the common property of mystics from the days of the *Bhagavad-Gita* down to the present. But in the method of presentation it is a noteworthy document. Bellamy's habit of thought is in no sense logical or deductive; it is purely intuitive and introspective; but nonetheless his analysis of the subjective contents of experience and his translation of their meanings into communicable terms is assured and self-critical enough to be objectively convincing.

The same technique, devoid in this case of its metaphysical pretensions, is brilliantly illustrated in his treatment of the consciousness of sin and the fear of retribution which were to him the two grimmest corollaries of New England Calvinism. His concern over these matters may seem a trifle forced to a generation for whom the theological connotations of sin no longer inspire terror. Nevertheless, in the chapter on "Nemesis" Bellamy

gives us an account of the self-tortured conscience which for its depth and penetration deserves to be ranked with the best literature on the subject. It is for this reason that Dr. Morgan claims Bellamy should be placed "not below Freud." This is perhaps what Veblen would call an "invidious comparison"; but at least it is fair to say that for his time Bellamy's understanding of the human personality shows remarkable insight into the nature of certain feeling-states and their complex interrelations and sequences.

Arthur Morgan's book, then, should be of considerable interest to both philosophers and psychologists. But also, it may be recommended to all who are interested in the history of American letters. It should not be forgotten that Bellamy was first and foremost a writer and that his distinctive gifts in this field entitle him to consideration for sometime to come.

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The Shaping of Psychiatry by War. By *Brigadier John Rawlings Rees, M. D.* (New York: W. W. Norton & Company, Inc.)

This book presents the Thomas William Salmon Memorial Lectures as given by the Consulting Psychiatrist to the British Army.

In the first lecture entitled, "The Frontiers Extend," the author outlines the purpose and scope of the lectures; and the rôle of psychiatry and psychology in the armed forces in time of war. Methods of psychiatric therapy, the disposition of inadequate men and the composition of the psychiatric casualty group are discussed.

In the second lecture, "Opportunities Emerge," the army selection methods are outlined for both officers and enlisted personnel. Morale is discussed with its three main factors—adequate war aim and purpose, a sense of one's competency and value and the feeling of being needed. Facts pertaining to discipline in the army are evaluated, the women's services are briefly mentioned and psychiatric education, psychological warfare and the treatment of "battle neurosis" are delineated.

In the third lecture, "The Way Ahead," an attempt is made to outline the future of psychiatry which has been influenced by the war, the place it will assume in socialized medicine in Britain and the hope is expressed that psychiatric concepts may be beneficial in producing world unity.

The author concludes with an appendix which sets forth a partial list of tasks undertaken by psychiatrists in the armed forces of various countries but detailed results are not given.

Certain opinions expressed in this book are at least open to debate, *e. g.*, "There seems little need to amplify greatly the teaching on psychosis," and ". . . . whilst there must without question be a continuance without interruption of basic research in the anatomical, physiological and biochemical fields that impinge on psychiatry, much of the emphasis will shift away from these in the future. . . . ." Much of the advanced work in this country continues to be in these very fields.

The title is excellent but it seems unfortunate that this volume should have been presented while censorship for security reasons prevented the inclusion of restricted material that might have added much to the reader's interest as well as to the value of the total effort.

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Employee Counseling. By *Nathaniel Cantor.* (New York; McGraw-Hill Industrial Organization and Management Series; 1945.)

This valuable book should have wide usefulness. The author quite convincingly maintains that labor has been viewed primarily as a commodity, along with other manufacturing materials and costs, and that industrial and personnel managers have not been sufficiently concerned with human social problems in their plants; that economic problems have been dealt with, but the persons having the problems have remained unrecognized. He ascribes the difference between the high efficiency in technological development and the relative lack of high morale in industry to the fact that the former lends itself to investigation and control by the scientific method, whereas morale is dependent on social interaction involving human actions, feelings, attitudes and sentiments which can be dealt with effectively only through understanding of people and their feelings. Industrial leaders have studied the *conditions* of employee dissatisfaction, but have ignored the *employees* as "dynamic, living, feeling individuals, who make choices, and have failed to realize that choices give rise to problems." Industrial leaders have failed to appreciate the real emotional and social needs of employees, as, for instance, that they want to feel that they are needed, that they count, and that they have a voice in what they are doing.

The author gives credit to psychiatry and clinical psychology as the sources of knowledge necessary for understanding people and doing effective counseling. It seems to the reviewer that the author slightly neglects findings in his own field of sociology and methods developed in related social-work practice.

On first reading, the theoretical framework, under the caption, "The Psychology of Adjustment," seemed hardly adequate. Doubtless brevity has some merit for intended readers who are not much accustomed to reading psychological material. Organized around patterns of dependence-independence and the will-guilt conflict, it seems to oversimplify the intricate and dynamic processes by which people grow up, relate themselves to others, make choices, undergo changes and resolve conflicting wishes. Some further attention to early personal relationships and environmental conditions which lead to repetitive behavior and determine a person's more or less characteristic patterns of feeling, would add to the reader's understanding of

employees' sentiments and problems. This would be particularly helpful in what the author regards one of the more difficult skills to learn in counseling, namely, trying to understand the feelings which the employee is reluctant to express.

Upon rereading this chapter, after having completed the book, it is clear that there is real merit in focusing attention on what the author calls the will-guilt conflict, because the counselor is constantly dealing with the employee's willing or purposing and with feelings of guilt about one or another of the possible lines of action to be chosen. It simplifies the counselor's thinking during interviews to ask two questions, "What does the employee want to do?" (granting that he may want outcomes that are irreconcilable), and "How does he feel about what he wants and what he can get?"

In a way, the title of the book is a misnomer, in that the author regards most so-called employee counseling as not being counseling at all. He prefers and constantly uses the term, "employee consultant," to name the person who does the only kind of counseling which he believes is effective. The job of the employee consultant is to help the employee help himself to adjust to a problem that interferes with his performing an efficient job. More specifically, his aim is to assist the employee in getting rid of or lessening the intensity of his emotional conflict, and so free him to do a better job. The consultant concerns himself only with the employee and his feelings and choices, and makes no attempt to juggle any of the environmental factors, such as job-assignment, transfer, classification, pay, etc. Neither does he, in any circumstances, give the employee advice. As the author puts it, "If there is going to be some kind of change, it will first take place in the heart and mind of the employee, and not through environmental manipulation or through the counselor's counseling the employee to take action. The counselor's job is to help the employee decide what the employee wants to do."

The fifty-five pages of illustrative "case" material reveal a wide range of problems dealt with, and without exception maintain the point of focus and adhere strictly to the objective cited above. The simplicity of the method is very clear, as consisting just of understanding listening, plus brief comments by the counselor which reflect the employee's strivings and feelings. This in turn gives the employee a sense of really being understood, so that he is free to express himself further and develop insight into his own problem. The employee consultant carefully avoids asking leading questions or making declarative explanations. Even though he feels fairly sure as to what the basic conflict may be, he avoids indicating this in his restatement of the employee's thought and feeling until the employee is on the verge of getting insight into the conflict himself. In short, the method used by the employee consultant in dealing with an employee with a fairly profound psychological problem is very similar to that which many psychiatrists with psychoanalytic orientation would use in short-term treatment of a mildly neurotic patient. In this book, the mistakes, as well as the correct comments, of the employee consultant are recorded and analyzed. This gives it added value for workers who are learning to use the method.

The concluding section, on organization, appears to be entirely sound. It calls for careful selection and adequate training of staff, for adequate supervision on the job, for the maintenance of professional status by the employee consultants and complete severance of this work from the many managerial housekeeping tasks which are routinely done by personnel departments. The importance of having the work understood and accepted by employees, foremen and higher management is properly stressed. The author expresses the opinion that after the war there will be less need for many of the routine things which personnel counselors have usually done. There will probably be greater need than ever to deal with the serious problems related to employees' intra-personal feelings with reference to their fellow employees, supervision, and their jobs. He anticipates that many kinds of frustrations and dissatisfactions, accumulated during and after the war, will find their outlet to a considerable extent in job relationships. Through this difficult period, the author believes the employee consultant can perform an invaluable service to industry through affording the employee a means of emotional release, a medium by which he can explore his problems in confidence with the assurance of understanding. He predicts that "companies will lead or lag according to their progressiveness in recognizing the worker as the core of their enterprize, and in doing something about it now, for the future."

The reviewer knows of no other published material in this field which discusses the problem as simply or as helpfully as does this book.

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IN MEMORIAM

SMITH ELY JELLIFFE

1866–1945

In the last week of September, there died at Huletts Landing on Lake George, where he had spent most of his time since retiring from active practice six years ago, Dr. Smith Ely Jelliffe, for forty years one of the great influences in American neuropsychiatry. He was in his seventy-ninth year. Dr. Jelliffe had been in ill health for a number of months, and in March and April of this year, with the appearance under new leadership of the *Journal of Nervous and Mental Disease* and the *Psychoanalytic Review*, edited by him uninterruptedly for as long as most of us can remember, came foreshadowings of September's sad event.

Dr. Jelliffe was born in New York, October 27, 1866. He came of old Connecticut stock. His father, William Munson Jelliffe, left Darien, Connecticut, as a young man to teach in the New York public school system, in which his mother, too, Susan (Kitchell) Jelliffe, taught before her marriage.

His early training in engineering and his interests in the natural sciences, especially botany, were strikingly remote from the specialties to which he later dedicated his life, yet they contributed perceptibly to that versatility and order of thought and expression which have always marked his work. After graduating from Brooklyn Polytechnic Institute, he abandoned engineering for medicine, receiving his degree from the College of Physicians and Surgeons in 1889. His interneship at St. Mary's Hospital in Brooklyn was followed by a year in Europe, with courses of study in Vienna, the first of many such periods abroad during which he became intimately acquainted with many of the most famous clinicians of the time, notably Kraepelin. In this first sojourn, however, there was little, if any, impulsion toward neurology and psychiatry, merely an effort to fill in certain gaps in clinical medicine and pathology, a desire to partake of the cultural and linguistic opportunities afforded, and to nourish at every opportunity his passion for botany.

It took several more years, in fact, for the latent predilection for neuropsychiatry to come to the fore. In the meantime, he started practicing medicine in New York, going through the usual struggle for economic establishment before he could embark upon marriage and the raising of a family. He served as a sanitary inspector to the Board of Health, taught at night school, did pathological and clinical work at the Methodist Episcopal Hospital, and a variety of other jobs to tide him over the perilous years. Soon, however, in 1894, he became an instructor in pharmacognosy and materia medica at Columbia. During this period he published but one small bit of neurological work. There was, on the other hand, considerable production in other fields, in pharmacology, botany, bacteriology and sanitation, in editorial writing and book reviewing for the *Medical Record* and other journals. Then he began to work in Dr. Starr's clinic in neurology, and in the quest of a Ph.D. at Columbia, which he received in 1899, delved into the comparative anatomy of the nervous system.

The summer of 1896 marked a memorable milestone in the career of Dr. Jelliffe, for it was then that he sought and obtained a post for the season at the Binghamton State Hospital and met Dr. William A. White. The friendship of these two men over a period of 40 years was an important force in the development of psychiatry in this country, with a rich output of neuropsychiatric literature, translating and editing, and the launching of the *Nervous and Mental Disease Monograph* series and the *Psychoanalytic Review*.

From this period on, the reorientation of Dr. Jelliffe became increasingly apparent. His interests remained catholic, as they did throughout his life, but there was a definite

DR. SMITH ELY JELLIFFE

swing to neurology and psychiatry. In 1899 he became associate editor of the *Journal of Nervous and Mental Disease,* and in 1902, managing editor. From 1904 to 1908 his writings centered about neurology; after that date they manifested a growing psychiatric bias, though titles of a purely neurological nature continued to appear. And as this tendency was established, there began to emerge, in his work and in his Journal, a smouldering preoccupation with psychoanalysis, pointed up in 1913 by the launching with Dr. White of the first psychoanalytic journal in English, the *Psychoanalytic Review.*

Dr. Jelliffe used the psychoanalytic focus in a highly original manner for the exploration of unknown fields of the human mind, the psychological substratum of organic disease, and all manner of problems inherent in medicine. He formulated an ingenious system of paleopsychology, tracing the phyletic development of the psyche on the vegetative, sensori-motor and symbolic levels. He admitted no dichotomy of mind and body, attaching enormous importance to the psychical in the determination of somatic disease.

The influence of Dr. Jelliffe was not restricted to his prodigious output of writings, in excess of 400 at the time of his death, nor to his editorial role, which was a mighty one indeed. He was an educator and busy practicing physician, consulting neurologist to different hospitals, an active member and officer of many learned societies. He was professor of pharmacognosy and technical microscopy at the College of Pharmacy at Columbia for a number of years, clinical professor of mental diseases at Fordham University, and adjunct professor of diseases of the mind and the nervous system at the Post-Graduate Hospital and Medical School for a long period. A bibliophile and linguist of note, Dr. Jelliffe acquired during his lifetime a rare and extensive personal library. His books begin with the classics and run the gamut of modern languages and literature, science, mathematics, botany, as well as the field of his special interests, particularly psychoanalysis. This library was transferred by him a few years ago to the Institute of Living, to be kept intact for research purposes.

The erudition, eloquence and analytic powers of Dr. Jelliffe made a profound impression upon all who knew him, whether personally or via the written word, whether or not they accepted the system of psychology which he followed and enriched. Psychiatry records with sorrow the loss of another of its valiant pioneers.

C. C. Burlingame, M. D.

BEVERLEY RANDOLPH TUCKER

1874-1945

The death of Dr. Beverley Tucker last June removed one of the staunch veteran representatives of neurology and psychiatry in the south and in America and one of the most highly respected and best beloved physicians in his native Virginia.

His high qualities of mind and heart and his professional achievements did credit to his distinguished ancestory, which included the prominent colonial families of the state—the Randolphs, the Carters, the Lees, the Ellis', Tabbs and Blands. "He was the recipient through inheritance of the best blood of Virginia, and with such equipment he fabricated his own life by his own labor and by his high ideals." These words wrote Dr. Tucker's life-long friend Dr. James K. Hall in his beautiful tribute in *Southern Medicine and Surgery.*

For thirty years Dr. Tucker had been the presiding genius at the private hospital in Richmond for nervous and mental disorders, now known as the Tucker Hospital; but this was only one of the many interests and connections that had marked his career.

The above-quoted words of Dr. Hall will be appreciated when it is recalled that Dr. Tucker was early dependent upon his own resources, was twenty-seven years old when he entered the Medical College of Virginia and had to pay his own way. Upon graduation in 1905 he went to Philadelphia where his future course as a neurologist and psychiatrist was determined. Here he was as-

sociated with his famous kinsman, Dr. S. Weir Mitchell, and other well-known neurologists. The Philadelphia years were followed by a season in New York at the Postgraduate Hospital as assistant to Dr. Joseph Collins and in graduate work at Bellevue Hospital and at Wards Island. Next came London and Queens Square Hospital, and Middlesex Hospital under Purves-Stewart; and finally Vienna for further work in pathology and neurology.

Dr. Tucker was the first professor of neurology and psychiatry at the Medical College of Virginia, taking over this newly created post in 1912.

During World War I he was a member of the Medical Advisory Board in Virginia and for a time served as contract surgeon at Camp Lee.

His work on pellagra he considered one of his most important studies, and he was the author of the pellagra section of the British Medical Annual for 1914. In 1916 appeared his book "Nervous Children," and in 1919 he contributed the section on cranial nerves and their diseases for Tice's System of Medicine.

The activities of Dr. Tucker were not limited to the professional field. He was not only an outstanding physician and teacher but a good citizen, with the active connotations of that term; the interests of the community and the state were his interests. He was the first physician to the Juvenile Court in Richmond and was one of the founders of the Childrens' Memorial Clinic. He was chairman of the first Governors' Advisory Board at the State Penitentiary, was a member of the State Board of Health and served in numerous other consultant and advisory capacities. For two years he was president of the Society of Cincinnati in Virginia. His versatility was reflected in his non-professional writings, his volumes of verse, drama, fiction and nonfiction. He had served as chairman of the Richmond Public Library Board.

The legacy and the memory of a rich, full and most useful life Dr. Tucker has left to his wife, the former Elsie Boyd, and to his two daughters and two sons—one a physician and both officers in the armed services.

With the eloquent words of J. K. Hall this memorial can be most fittingly closed:

"I can think of no other individual who symbolized more impressively the dual spirit of the old South, with its dignity and tolerance and courage, and the spirit of the renascent South, now come again into the high place of olden days. Whenever Beverley Tucker became a member of a group one realized that a gentleman of colonial Virginia was in the midst, as well as an alert, modern-day scientist, eager to know the cause of insular sclerosis and the meaning of schizophrenia."

C. B. F.